



ADDIS ABABA UNIVERSITY  
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES  
SCHOOL OF PSYCHOLOGY

ASSESSMENT of DEPRESSION, ANXIETY AND STRESS  
AMONG PRISONERS IN KALITI HIGH SECURITY PRISON  
CENTER

BY  
TAREKEGN MULU

December, 2021  
Addis Ababa, Ethiopia



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DEPRESSION, ANXIETY AND STRESS AMONG PRISONERS IN KALITI  
HIGH SECURITY PRISON CENTER

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A THESIS SUBMITTED TO THE SCHOOL OF PSYCHOLOGY, ADDIS  
ABABA UNIVERSITY, IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE AWARD OF MASTER OF ARTS DEGREE IN  
COUNSELING PSYCHOLOGY

December, 2021  
Addis Ababa, Ethiopia

**Addis Ababa University**  
**College of Education and Behavioral studies**  
**School of Psychology**

**Depression, Anxiety and Stress among Prisoners in Kaliti High Security Prison Center**

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## **Declaration**

The researcher hereby declares that the thesis on the title “ Depression, Anxiety and Stress among Prisoners in Kaliti High Security Prison Center in Addis Ababa” is my original work and that all sources of materials used for the thesis have been properly acknowledged.

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## **Acknowledgements**

Above all, I would like to express my gratitude to my Almighty God for providing me with patience, energy, and initiation during my academic journey. I would also like to thank to my dear father, Mulu Zerga (Abegaz), for showing me the right path of education and learning since I was a child and motivating me to learn towards a goal. Following, I would like to extend my heartfelt respect and gratitude to all my families especially to my wife, Netsanet Asmare and my little daughter, Maya Tarekegn, for all their patience and unconditional love throughout the journey of this academic project and our life as well.

Secondly, I would like to thank Dr. Assefa Berihun, my advisor, for his sincere, intelligent, and relevant thoughts, ideas, and recommendations. Moreover, I would want to thank the staff at Kaliti High Security Prison Center, especially the counselors and social workers, for their positive attitude and aid in gathering data. I would want to thank everyone who participated in this study for their genuine willingness and cooperation in facilitating the data gathering process.

Finally, I want to express my gratitude to my coworkers, friends, classmates, and those others who have helped me in different ways over my academic career.

## **Abstract**

*Many people suffer from mental or behavioral diseases worldwide. Inmates in prison are especially susceptible to these illnesses. However, a lack of research into the prevalence and severity of psychological issues including depression, anxiety, and stress can have detrimental consequences in the life of inmates. The purpose of this research was to assess depression, anxiety, and stress among inmates at Kaliti High Security Correction Center. A cross-sectional research design was used in this study and a total of 288 inmates participated and filled the questionnaire. The data was examined with descriptive statistical methods such as frequency, percentage, mean, and standard deviation, as well as inferential statistical methods such as One Way ANOVA and Multiple regression analysis. Based on the findings of the study, 78%, 62.8%, and 64.9% of respondents reported symptoms of depression, anxiety and stress respectively ranging from mild to severe. Inmates who were single had higher rates of depression, anxiety, and stress scores than those who were married. Convicts with children were shown to have a high level of depression, anxiety, and stress. There was a statistically significant variation in the prevalence and degree of depression, anxiety, and stress among inmates depending on age, marital status, having children, religion and educational status. Furthermore, multiple regression analysis revealed that depression, anxiety and stress were associated with socio-demographic and prisoner related variables. Based on the findings, it is possible to conclude that having children is a risk factors for the prevalence of symptoms of depression, anxiety and stress.*

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## **Acronyms and Abbreviations**

ANOVA	Analysis of Variance
DASS	Depression, Anxiety and Stress scale
DF	Degrees of Freedom
N	Number
M	Mean
SD	Standard Deviation
Sig.	Significance
SPSS	Statistical Package for Social Sciences

## CHAPTER ONE

### INTRODUCTION

#### 1.1. Background of the Study

Prisons are designed to serve different purposes. According to Ethiopian criminal code, which was published in 1996 E.C, criminal laws aims at the prevention of crimes by giving due notice of the crimes and penalties prescribed by law and if it is ineffective, by providing for the punishment of criminals in order to deter them from committing another crime and make them a lesson to others, or by providing for their reform and measures to prevent the commission of further crimes. In general, "punishment" refers to an act of purposely inflicting pain, harm, or suffering on another person, such as in retaliation for an illegal act (David & Nick, 2014).

Imprisonment has negative psychological effects on its inmates, which leads to psychological deterioration (Jhon, 2015). There is a great need for the prisoners to receive psychological services, some inmates need help coping with the length of their incarceration, dealing with being separated from loved ones and friend or accepting that the prison is going to be their home for a period of time or forever. Others need to be taught how to live and survive in the prison environment (Shivani, 2013).

Mental or behavioral diseases affect an estimated 450 million people globally. These disorders are particularly common among jail inmates (WHO, 2001). Several factors contribute to the abnormally high rate of mental illness in prisons. Many of the mental disorders may exist before admission to prison and further exacerbate by the stress of imprisonment (WHO, 2001). However, mental problems can develop while incarceration as a result of the conditions in place, as well as a result of torture or other breaches of human rights ( Brinded, Simpson, Laidlaw, Fairley & Malcolm, 2001).

According to studies, criminals experience higher levels of anxiety and despair, as well as lower levels of self-esteem, than the general population, especially among certain prison groups (Castellano & Soderstrom, 1997). Butler, Allnutt, Cain, Owens, & Muller (2005), looked at both sentenced and reception prisoners in New South Wales, Australia, and found that 43% of those tested had at least one of the following psychiatric conditions in the previous year: psychosis, anxiety, or affective disorders.

Overcrowding, filthy and gloomy settings, inadequate health care, and physical or verbal hostility are all factors in jails that can have a negative impact on mental health. Mental anguish is exacerbated by a lack of meaningful activity, privacy, and opportunity for quiet rest and introspection. Guilt or humiliation, anxiety at being removed from family and friends, and concerns abound. Early diagnosis, treatment, and rehabilitation are virtually non-existent in many prisons, particularly in impoverished countries (Birmingham, 2004; Gunter, 2004; Drapalski, Youman, Stuewig, & Tangney, 2009; Lafortune, 2010).

According to Ethiopian studies, the majority of which focus on detention conditions and prisoner human rights issues, reveal that prison circumstances are difficult in the country, with detainees suffering from extreme overcrowding, starvation, and unsanitary circumstances (Addisu, 2012; Shambal, 2007). Most of the prisoners are in their productive age and are expected to contribute to their country upon their return from the prison. Moreover; they can be trained in various vocational activities while in prison that would equip them with knowledge and skills for their future life. This would not happen if the prisoner's well-being were not maintained.

The Ethiopian federal prisons commission's establishing proclamation No.365/2003, on the other hand, authorized the commission to give inmates with academic education, vocational training, social work and counseling services in order to facilitate their post-release rehabilitation and law-abiding behavior. Such disparities exist between the rehabilitation demands of inmates and the rehabilitation services available at prisons.

Ethiopia has a high prisoner population on both the federal and regional levels. The federal government administers three Ethiopian prisons: Kality, Diredawa, and Shewarobit. Major offenses are usually prosecuted in federal prisons. Kality Prison, also known as Kilinto Prison, is a federal prison in Addis Ababa, Ethiopia, that serves as the country's major prison, dealing with the country's most serious crimes that require lengthy sentences. Furthermore, in each of the country's nine regions, there are around 9 regional prisons (Haidar, Melaku, & Pobocik, 2010).

## 1.2. Statement of the Problem

Incarceration is viewed as a highly stressful experience with long-term mental health implications for offenders (Blackburn, 1993). Correctional facilities' setting and character frequently have psychological implications that work against rehabilitation and re-offending reduction goals. Instead, incarceration has a negative influence on mental health, leading to feelings of hopelessness and anxiety (Gavin, 2014, Jordan, 2012).

For instance, overcrowding, high levels of violence, inmate injustice, a lack of resources, and social unrest are all regarded as psychologically stressful experiences. Enforced seclusion, solitary incarceration, substance abuse, future insecurity, and regime monotony are all implicated (Fraser, Gatherer, & Hayton, 2009). As a result, there are various risk factors for the onset of mental illness when people are incarcerated.

A large -scale epidemiological studies of psychiatric morbidity conducted in England and Wales by Singleton, Meltzer, & Gatward, (1998) have extensively demonstrated that all types of mental illness, including personality disorders, are prevalent. Mental disease morbidity in prisons is exacerbated by both external and internal factors.

Factors in prisons that may adversely affect mental health include overcrowding and unsanitary housing circumstances, low food quality, insufficient health care, physical or verbal hostility by inmates, the availability of illicit narcotics, a lack of privacy, and time for quiet relaxation are all common external problems. In addition, internal causes are primarily emotional, with inmates experiencing emotions of guilt or shame about their actions, the stigma of being incarcerated, and concern about the effects of their actions on others, especially their family and friends. Timely identification, treatment and rehabilitation are almost non-existent in many prisons, particularly in the developing countries (Birmingham, 2004; Gunter, 2004; Drapalski, Youman, Stuewig, & Tangney, 2009; Lafortune, 2010).

The lifetime incidence of depression was discovered to be 24.9 % among 193 offenders in a study conducted in Durban, South Africa, using the Mini International Neuropsychiatric Interview (Naidoo &, Mkize, 2012). According to a study done in Nigeria's maximum-security prison, 57 % of convicts had mental diseases, with depression accounting for 30.8 %. Any country's prison system serves a critical role in reducing crime and in rehabilitating lawbreakers' undesirable behaviors (John, 2015). A cross-sectional study in Ethiopia's Hawassa Central Correctional Institution (n = 355) discovered that 56.4 % of

detainees suffer from depression (Bedaso, Kediro, & Yeneabat, 2018). Only a few researches have been undertaken in Ethiopia in this field. According to a study conducted by Abel, Berihun, Teresa, Nigussie, & Telake (2016), more than one-third of those detained in the North West of Amhara regional state have an anxiety condition, which is a frequent psychological ailment.

All the above studies indicated that there is a high prevalence of psychological problems in prison centers in Ethiopia. But the sites where the studies had been conducted were different from this site selected for the current study. In addition, the studies were limited to show the prevalence of depression, anxiety and stress. They do not include the level of depression, anxiety and stress among prisoners. Since Kaliti High Security Correction Center is one of the major prison center having a large number of convicted prisoners, a research that attempts to analyze the psychological level and prevalence of these psychological difficulties faced by prison inmates with especial emphasis on depression, anxiety and stress is very important. Therefore, conducting studies like this is important for filling the knowledge gap by assessing the psychological challenges of depression, anxiety and stress and its level and prevalence among convicted prisoners. Besides this study attempted to examine the differences in terms of age, marital status, having children, religion and educational status in depression, anxiety and stress among prisoners in Kaliti High Security Prison Center.

### **1.3. Objectives of the study**

#### **1.3.1. General objective**

The main objective of this study is to examine the prevalence and contributing factors of depression, anxiety and stress among convicted prisoners in Kaliti High Security Correction Center.

### **1.4. Research Questions**

To this end, it seeks to answer the following basic questions.

1. What is the prevalence and level of depression, anxiety and stress among convicted prisoners?

2. Is there a statistically significant difference in depression, anxiety and stress among prisoners in terms of age, marital status, having children, educational status, type of crime, length of sentence and duration of stay?

### **1.5. Significance of the Study**

This work will be significant because it will serve as a foundation for future research in this field. Furthermore, the findings of this study may be used as a source of information by interested government and nongovernmental organizations in order to develop strategies to solve the problem. Finally, the findings of this study may be used by correctional center professionals (psychologists, counselors, sociologists, social workers, and health workers) to better understand the problem and devise strategies for implementing various resolving mechanisms in their daily rehabilitation activities.

### **1.6. Delimitation of the Study**

The purpose of this research was to find out how common and severe psychological problems like depression, anxiety, and stress are. Furthermore, the study was limited to the Kaliti High Security Prison, not other prisons. Besides, this study only looked at male criminals who were arrested by the law and did not have a mental illness diagnosis, neither those who were held at the Kaliti High Security Correction Center or those who are being held without charge there.

The study did not focus on those foreigners who were incarcerated in the correction center since there may be socio-cultural differences among prisoners. In addition, the study did not focus on under aged and juvenile offenders incarcerated in the center. The study did not include those prisoners who were on a status of awaiting trial and those who were in a state of different kinds of illnesses. The length of time period of convicted prisoners ranges from a minimum of 6 months to a maximum of life imprisonment.

### **1.7. Operational Definition**

**Anxiety:** in this study refers to fear of danger, worries and physical symptoms such as headache, or an upset stomach as measured by DASS-21, Anxiety-subscale

**Correctional Center:** is a place where peoples mind will be changed through punishment, deterrence and rehabilitation.

**Depression:** in this study refers to loss of interest, enjoyment, reduced energy, leading to increased fatigue and diminished activity as measured by DASS-21, depression sub-scale.

**Offenders:** a person who are suspected for committing a certain crime and kept in correction center whether convicted or awaiting trial.

**Stress:** in this study refers to physical, emotional, or psychological strain as measured by DASS-21, stress-sub-scale.

## CHAPTER TWO

### LITERATURE REVIEW

In this chapter, the existing related literatures which are most relevant to the purpose of study are reviewed. It attempted to address the overview of correction centers, conceptual explanations of psychological constructs that the study attempted to focus and the different philosophical assumptions related to imprisonment. Moreover, this chapter comprises of the review of the theoretical explanations of the psychological variables that the study attempted to address and the empirical study finding related to the study variables.

#### 2.1. An Overview of Correction Centers

The Correction Center is a place where that person who commits a crime kept while awaiting trial or those who are convicted. Despite the fact that the form and organization of Correction Centers vary per country, they all have a generally similar goal. Correction Centers, according to Mukiza (2014), have the goal of enforcing society standards, ensuring the general public's safety, imposing punishing punishments on offenders, and rehabilitating convicts.

Because the Correction Centers function as a holding facility for inmates with the aforementioned purposes, they are responsible for providing services to those inmates in order to achieve their goals. This responsibility begins the moment fresh inmates are admitted to the correctional facility (Fraser, 2014). Overcrowding, a terrible jail environment, a lack of specialists, inadequate medical care, and insufficiency of rehabilitation programs, among other issues, plague most African countries' prison systems (Nwolise, 2010). As a result of the difficulties that plague most African prisons, many ex-offenders return to crime after being released, causing insecurity and putting citizens' lives and property at risk.

Due to a scarcity of literature, the history and development of Ethiopian correctional institutions are poorly understood (Ethiopian Human Right Commission, 2012). According to Worku, Geberemariam,& Belete (2014),the practice of imprisoning and punishing opponents who surrendered at battle fields or were accused of defying their rule and power began during power struggles among princes during the "Zemene Mesafint" (the Ethiopian term for "era of the princes") to imprison their opponents who were accused of defying their rule and

power. In Ethiopia, the practice of detention dates back to the 17th century, according to similar sources (Gulilat, 2012; Tadesse, 2011). The conditions of the places presumed to be used as prisons in Ethiopia, as well as the methods employed to confine offenders, have been harsh and degrading since that time, especially when compared to the criteria that such facilities are expected to meet these days (Tadesse, 2011).

## **2.2. Conceptual Explanation of Psychological Constructs**

### **2.2.1. Depression**

Several literatures depicts that depression involves common symptoms such as despair, loss of interest or pleasure, low energy, guilt or low self-worth, disrupted sleep or meals, and reduced focus. Depression can become chronic or recurrent, severely affecting one's ability to do daily tasks, and can lead to suicide in the worst-case scenarios.

According to the American Psychological Association (APA, 2010), depression includes the following symptoms:

- A. Depressed mood for the most of the day, practically every day, as evidenced by either subjective account (e.g., feels gloomy, empty, and hopeless) or observation by others (e.g., appears tearful). (Note: irritated mood in children and teenagers is possible.)
- B. Considerably reduced interest or satisfaction in all, or almost all, activities for the majority of the day, usually every day (as indicated by either subjective account or observation.)
- C. The weight growth or loss of a child in a month, as well as their hunger levels, should be taken into account. While compared to when not dieting, a diet might result in significant weight loss or growth, as well as a consistent decrease or increase in hunger.
- D. Insomnia or hypersomnia on a daily basis.
- E. Almost every day, psychomotor agitation or retardation (observable by others, not merely subjective feelings of restlessness or being slowed down).
- F. Nearly every day, you experience fatigue or a loss of energy.

- G. Nearly every day, you experience feelings of worthlessness or excessive or inappropriate guilt (which could be illusory) (not merely self-reproach or guilt about being sick).
- H. Indecisiveness or a loss of ability to thought or concentrate on a daily basis (either by subjective account or as observed by others).
- I. Suicidal ideation without a particular plan, recurring suicidal ideation without a particular plan, or a suicide attempt or a deliberate plan for suicide.

Depression is a severe mental illness. As reported by World Health Organization (WHO, 2012) every year; about one million people or 3000 people every day; die by suicide. Furthermore, twenty or more individuals may try suicide per each successful suicide. Still, WHO indicates that one out of every nine convicts has a mental disease, the most prevalent of which are sadness and anxiety. Overcrowding, violence, forced isolation, a lack of privacy and meaningful activities, isolation from social norms, anxiety about the future, and improper mental health treatment in prisons all contribute to this population's high risk of mental illness.

### **2.2.2. Anxiety**

Anxiety is defined as a feeling of worry, nervousness or unease about something with an uncertain outcome (The Oxford dictionary, 2015). Anxiety is characterized by transient fear, uncertainty, and apprehension about the future, but individuals vary on the frequency and intensity with which they experience anxiety (Barlow, 2004). When an individual experiences anxiety frequently, at high intensities, and/or in inappropriate situations, they may then be diagnosed with an anxiety disorder, including generalized anxiety disorder, panic disorder, phobias, and others. The DSM 5 reclassified PTSD as a trauma and stressor-related disorder rather than an anxiety disorder. In the United States, the lifetime prevalence of any anxiety disorder is greater than 25% (Kessler, 2009).

Anxiety is a subjective experience of distress, as well as difficulties with sleep, attention, social, and/or vocational performance. Despite their similarities, the look, duration, and treatment of anxiety disorders vary greatly. For example, panic disorder, is characterized by a brief period of intense dread and a sense of impending doom, as well as physical symptoms such as chest pain, dizziness, and shortness of breath (Markowitz, Weismann,

Ouellette, Lish, & Klerman, 1989). Excessive worry for at least six months duration, as well as trouble managing stress, is diagnostic criteria of anxiety disorders. Anxiety disorders are characterized by a subjective sense of distress, as well as difficulties with sleep, attention, social, and/or occupational performance. Despite their similarities, the appearance, course, and management of these illnesses differ significantly.

### **2.2.3. Stress**

Stress is a set of unfavorable physiological and psychological responses that occur in a predictable pattern. It occurs when people become aware of health risks that they may not be able to resolve (Lazarus & Folkman, 1984). According to the definition, a relationship between the individual and the environment must exist before stress may occur. When people are seeking to solve a problem, they interact.

According to Selye (1956), stress is "any external incident or any internal impulse that threatens to alter the organism's homeostasis" is what stress is defined as. When an individual believes that demands are greater than his or her ability to mobilize personal and social resources, stress develops.

Selye (1993) identified a list of symptoms describing stress. These include:

- Aches and pains.
- Chest pain or a racing feeling in your heart.
- Insomnia or exhaustion
- Headaches, vertigo, or tremors.
- Hypertension
- Muscle tightness or clenching of the jaw.
- Problems with the stomach

## **2.3. Philosophical Assumptions of Imprisonment**

### **2.3.1. Deterrence Philosophy**

Deterrence philosophy is an approach which states that crime can be averted based on making the punishment certain, serve and quick. Individuals should seek to obtain pleasure while avoiding pain, according to deterrence philosophy. According to this theory, making a decision that is unpleasant enough can deter people from committing crimes. Specific and

universal deterrence are the two types of deterrence. When a criminal is released into society, the cost of punishment must be at least equal to the profit of the crime. As a result of seeing the consequences of others' criminal deeds, others will not commit crime (Redi, William, & Daniel, 2016).

### **2.3.2. Liberal Approach**

Liberal approach is an ideology about imprisonment which states that human behavior is influenced by upbringing, affluence or poverty, education, and life experiences in general. Rehabilitation and reform are central to the liberal approach.

According to liberal approach, the goal of incarceration should be to transform the individual. By addressing issues such as drug addiction, low self-esteem, and a lack of job skills, rehabilitative programs and re integrative aid, such as job placement assistance, will help the person avoid future imprisonment. Human behavior is shaped by life experience, according to the liberal perspective. This strategy includes both rehabilitation and reform. The goal of prisons should be to transform inmates and prevent them from committing future crimes (Jocelyn, 2005).

### **2.3.3. Reformative Approach**

Is a theory which states that the objective of punishment should be the reform of the criminal through the method of individualization. According to this theory, committing a crime is a disease that can be treated through reformation. The culprit gets morally cleansed while also modifying a few bodily habits. The goal of this idea is to make the criminal so mentally strong that he is unable to succumb to the impulse to do crime. He is reeducated and disciplined in order to become an all-around powerful individual.

This theory is based on the humanistic principle that even if an offender commits a crime he does not cease to be a human being. Ultimately, this entails the offender's transformation. The goal of reformative punishment is to re-educate, teach, train, or inculcate a new morality in the individual. Rehabilitation, on the other hand, does not aim to transform the offender, but rather to return him or her to the state in which they were before the crime was done (David & Nick 2014).

### **2.3.4. Rehabilitation**

Rehabilitation is a philosophy that can be defined as the correctional treatment of criminals in order to transform their thinking and behavior and have a beneficial impact on society (Cullen & Jonson, 2011). Rehabilitation theory has been shown to be a successful correctional strategy. The rate of recidivism in society is decreasing as a result of various treatment initiatives (Reid, William, & Daniel, 2016).

Inmates are meant to be guided/supervised in rehabilitation programs, which include prison training and therapy programs, according to the jail rule. As a result, the level of supervision (that is, training and treatment) provided to offenders in jails (and after their release) will affect their success in life after incarceration (Harper, Grunt, Careen, & Chitty, 2004).

The benefits of rehabilitation programs are numerous and include: acquiring skills, learning responsibility, increasing hope and motivation, increasing social skills and cooperation, reducing mental health effects, reducing stress and anxiety, and reducing recidivism (Fine, 2006; Deaton, 2005; Strimple, 2003; Wilson & Turner, 1998). This shows that rehabilitation is necessary because it helps prisoners become better members of society by providing them with the tools to do so. It is clear that implementing rehabilitation programs in prisons can have positive effects for offenders. Many correctional facilities around the world have realized these benefits which is why many of them have begun to integrate rehabilitation programs in their institutions.

### **2.3.5. Restorative Justice**

Restorative justice seeks to make all parties involved whole again, rather than punishing the perpetrator. They contend that the offender should meet with the victim and apologize for his actions, as well as make amends for the harm he has caused (Joycelyn, 2005). Restorative justice is a philosophy that aims to help incarcerated people reintegrate into society. This position holds that the offender is a member of society who, if not reintegrated, will likely commit future crimes (Redi et.al, 2016).

## **2.4. Theoretical Explanation of Depression**

### **2.4.1. Biological Perspectives of the Etiology of Depression**

#### **Endocrine Alterations:**

Endocrine glands are several different organs in the body in different places, consisting of specialized cells that synthesize, produce, and secrete chemicals that have very important functions in the body, called "hormones", such as the pituitary gland located at the bottom of the brain and thyroid gland at the front of the neck (Ali Mohammed, 2018). People are more susceptible to depression as they get older and have biological risk factors such as endocrine, inflammatory or immunologic cardiovascular, and neuro anatomical characteristics (Clarke & Currie, 2009).

#### **Genetic Vulnerability**

Depression is well-known to run in families, as a result of both genetic and environmental influences. Genetic differences between individuals account for about one-third of the risk of severe depression in adults, according to a review of twin studies (Kendler, Gardner, & Prescott, 2006); Sullivan, Neale, & Kendler, 2000). This number is far lower than for other mental diseases such as schizophrenia or bipolar disorder (McGuffin, Andrew, Sham, Katz, & Cardno, (2003); Sullivan, Kendler, & Neale, 2003).

### **2.4.2. Environmental Factors**

Depression is frequently misunderstood as a reaction to adversity in one's life. Diathesis-stress perspectives dominate etiological paradigms. A diathesis is a risk factor or susceptibility mechanism that accounts for individual variances in how they respond to similar stressful events, such as people's biological, personality, or cognitive qualities. In order to illustrate key points as well as to draw attention to circumstances that help to identify populations at particular risk for depression, we focus on three kinds of stressful environmental conditions. These are: (1) acute negative life events, (2) chronically stressful life circumstances, and (3) exposure to adversity in childhood.

### **Acute Life Events**

A crucial risk factor for depression is the incidence of adverse, bad life experiences. Stressful life events are thought to be the root of the majority of major depressive episodes (Hammen, 2005; Kessler, 1997). Mazure (1998) found that depressed patients were 2.5 times more likely than controls to have recently experienced stress, and that 80 % of depressive cases in community samples were preceded by significant negative life experiences.

The majority of stresses occur in the first 3 to 6 months, and the majority of serious depression onsets occur during the first month after a severe negative life event (Kendler, Karkowski, & Prescott (1998). There is evidence that the severity and number of unpleasant occurrences have a linear association with the chance of getting depression (Kendler et al., 1998). On the other hand, the "severity" of an acute life event's impact is decided not only by the event's real circumstances, but also by the individual's subjective assessment of the event. As a result, one individual may get sad only in the most extreme cases of loss and hardship, while another may become depressed as a result of exaggerating the significance of a tiny event due to particular vulnerabilities.

### **Chronic Stress**

Acute, episodic life experiences only convey part of the picture when it comes to depression. Long-term exposure to stressful situations is another etiology of depression that has gotten little attention. Many researches on stress and depression have been unable to differentiate between chronic and acute symptoms (Brown & Harris, 1978; Caspi, Sugden, Moffitt, Taylor, Craig, Haringt, & others, 2003).

Chronic stress, like acute stress, has a two-way effect on depressive illnesses and stressful chronic environments. Depression can be brought on by a number of things, including poverty, unemployment, or displacement (as in the case of immigrants and refugees), but it has a significant impact on a person's ability to cope with or alter their circumstances.

Another distinguishing feature of chronic stress is that it has a wide variety of effects on a big number of people. Investigate the link between a numbers of important depression demographic characteristics. According to Hasin, Goodwin, Stinson, & Grant, 2005, a major depressive episode was connected to being female, having a low income, and being bereaved, divorced, or separated (2000).

Unemployment, disability, and being a stay-at-home parent have all been linked to severe depression. Low educational attainment, low income, and a precarious employment position are all linked, and a widowed, divorced, or separated woman is more likely to be impoverished (Kessler, Berglund, Demler, Jin, Koretz, Merikangas, Walters, & Wang, 2003).

### **Exposure to Early Adversity**

Kessler & Magee, (1993) employed a new research method to investigate for correlations between depression and one or more negative occurrences. They discovered that a range of childhood stressors (parental drinking, parental mental illness, family violence, and parental marital issues) were linked to major depression in a large retrospective epidemiological study of community residents who met criteria for severe depression. Parental mental illness, hostility, and divorce were all identified as major predictors of depression recurrence.

In a later study, Kessler, Davis, & Kendler (1997) examined 26 adversities that occurred before the age of 16, and discovered that while many of the events were connected to adult major depressive illness, the adversities were also associated to a variety of psychopathologies. The researchers also discovered that three-quarters of respondents have experienced one or more adversities, and that the adversities tend to overlap or cluster together. They also stated that no causal correlations between adversity and disorders can be established because there may be unmeasured shared variables that are responsible for both adversity exposure and subsequent disease. While childhood traumas and early stressful experiences may have a role in depression, additional research into the intricate connections is required.

### **2.4.3. Cognitive Vulnerabilities to Depression**

There is substantial evidence that when a person is in a melancholy mood or episode, their thinking is substantially more negative than when they are not (Clark, Beck, Alford, 1999). Furthermore, prospective studies have revealed that people who are thought to be at risk for developing depressed symptoms as a result of unusually negative thinking are indeed at risk (Alloy, Abramson, Smith, Gibb, & Neeren, 2006; Gibb, Beevers, Andover, & Holleran, 2006).

The records-processing approach to cognitive vulnerability refers to faulty cognitive strategies such as attention and recollection biases, as well as an overly generalized thinking style (Joorman, 2008; Mathews & MacLeod, 2005). Such biases may also lead to a preference for bad information and limited availability to good memories, increasing the risk of dysphonic response to traumatic events. The study of the origins of depressogenic cognitive styles has been a fascinating recent development in cognitive theories of depression. Several research have linked children's negative cognitive styles to parent-child communications marked by criticism and dis confirmation, poor relationship quality, and modeling and learning of the parent's own negative cognitive style.

Negative cognition has also been linked to a history of child abuse and maltreatment, according to studies (Alloy et al., 2006). According to the committee's examination of the literature on the impact of genetic factors in child outcomes (Abramson et al.1978; Lau, Rijdsdijk & Eley, 2006) , there is also evidence of heredity of depressogenic attributional style and other indications of cognitive sensitivity to depression in youth.

#### **2.4.4. Interpersonal Vulnerabilities to Depression**

Depressive disorders are known to be associated with considerable impairment in interpersonal functioning, marital discord, intimate partner violence, parenting difficulties, insecure attachment, and low social support, to mention several specific areas.

The symptoms of depression may contribute to difficulties in close relationships. Irritability, loss of energy and enjoyment, sensitivity to criticism, and pessimistic or even suicidal thoughts may initially elicit concern from others, but eventually they may seem burdensome, unreasonable, or even willful sometimes eroding the support of spouses, friends, and family (Coyne, 1976). There is also growing evidence that enduring maladaptive characteristics of a person's interpersonal style and relationship cognitions can be observed even when the person is not depressed, and that these characteristics may serve as risk factors for the development of depression, perhaps in part due to their contribution to stressful conflict and loss events (Eberhart & Hammen, 2009; Hammen & Brennan, 2009).

Marriage strife is a common cause of sadness. Multiple researchers have found substantial links between depression and self-reported marital dissatisfaction in meta-analyses (Whisman, 2001). Divorce and never-married status are more common among persons who suffer from depression (Coryell, Scheftner, Keller, Endicott, Maser, Klerman &

1993). According to one interesting study, depression compared with other disorders, is uniquely associated with marital dissatisfaction.

Depressed people, both men and women, reported much fewer pleasant and more negative interactions with their spouses than the nondisorder and nondepressive disorder groups, according to (Zlotnick, Kohn, Keitner, & Della, 2000). Not only did present melancholy mood predict marital unhappiness for the self, but also the spouse's depressed mood predicted the partner's discontent, according to Whisman, Uebelacker, and Weinstock (2004). Other research have found that depression and marital dissatisfaction have a bi-directional relationship (Coyne, Thompson, and Palmer, 2002; Davila, Karney, Hall, & Bradbury, (2003).

The quality of the relationships at the conclusion of the follow-up, as well as the boyfriend's discontent, were substantially connected with the amount of time the woman had spent in major depressive episodes, according to a study of young women's romantic relationships over a 5-year period (Rao, Hammen, & Daley, 1999). Golding (1999) found that the weighted mean rate of depression among survivors of partner violence was 47% in a meta-analysis. Not only is partner violence a primary stressor that raises the risk of depression, but it also affects the victim's trust in others, feelings of isolation, and coping strategies, all of which raise the risk of depression (Calvete, Corral, & Estevez, 2007). A maternal history of trauma, particularly a mother's death, is a major predictor of mother depression in home visiting samples.

## **2.5. Theoretical Explanation of Anxiety Disorder**

### **2.5.1. Associative Learning Processes**

Respondent (Classical or Pavlovian conditioning), vicarious (social modeling), and operant (Skinnerian conditioning) methods of fear acquisition are proposed in behavioral models of anxiety disorders. Early classical conditioning narratives including the direct coupling of stimuli with aversive events (e.g., a huge dog bites a child, resulting in a fear of dogs) have been criticized for their shortcomings. Although the following discussion focuses on specific conditioning events, it is important to note that many people with phobias and anxiety disorders do not develop these problems as a result of a single exposure to a feared

stimulus (Bouton, Mineka, & Barlow, 2001) highlighting the importance of preexisting vulnerabilities and additional risk factors in the development of clinical-level problems.

### **2.5.2. Cognitive Processes**

Different cognitive processes, such as encoding, interpretation, and recollection, may contribute to the development and maintenance of anxiety disorders, according to proponents of cognitive and information processing theories (Field, Hadwin, & Lester, 2011; Vasey, Dalgleish, & Silverman, 2003). Anxious children, according to these ideas, have distorted perceptions, memories, and intentional selectivity (Vasey & MacLeod, 2001). It's thought that these biases operate together to promote and maintain anxiety.

### **2.5.3. Social and Interpersonal Processes**

According to attachment theory, the underlying quality of the parent–child relationship, for example, influences a child's interactions with the environment, and a number of things influence the quality of that relationship (e.g., poverty, parental psychopathology). Human newborns create long-term emotional relationships with their caregivers, according to attachment theory (Bowlby, 1977; Cassidy, 1999). When the child's caregivers are attentive, the resultant emotional bonds can create a sense of security that lasts even when the caregiver is not present. Insecure attachment, on the other hand, may be linked to a caretaker who is inconsistently responsive, negligent, or otherwise disrupts the parent-child tie. Separation is especially difficult for children with unstable attachments.

## **2.6. Theoretical Explanation of Stress:**

Various fields have different ways of defining stress, resulting in medical, environmental, and psychological stress models (Mc Namara, 2000). The medical definition of stress is a condition of distress in a person as a result of an external trigger. Increased heart rate and blood pressure are some indicators of an organism's psychological response.

### **2.6.1. The Environmental Model**

Stress can be measured using a stress inventory when it is attributable to external stimuli, such as impending injury or adverse environmental circumstances. It has also been related to negative consequences such as anxiety, depression, and violent conduct (Jasor, Langrock & Keller, 2005).

### **2.6.2. Psychological Model:**

The psychological model of stress emphasizes the concept of perceived stress, which relates to an organism's perception and judgment of the potential harm posed by a stimuli. An individual feels betrayed when his or her perceived ability to cope with the demands placed on him or her exceeds his or her perceived ability to cope with those demands (Quyen, 2007). This imbalance generates tension and, as a result, a physiological and psychological stress response (Martin, Kazarian, & Breiter, 1995).

Although the three models define stress from different perspectives, the concept of stress can generally be considered as “Any factor, acting internally or externally, that makes adaptation to environment difficult and induces additional effort on the part of the individual to maintain a condition of balance between himself and the external environment” is how stress is defined (Humphrey, Yow, & Bowden, 2000,).

According to Lazarus and Folkman (1984), stress is a mental or physical event that results from one's cognitive evaluation of stimulus and one's interaction with the environment. Whether an event is perceived as a challenge or a threat determines a person's stress response. A difficult stimulus may provide positive outcomes such as enhanced motivation and task performance.

## **2.7. Empirical Studies on the Prevalence of Depression, Anxiety and Stress**

The empirical studies on the prevalence of depression, anxiety, and stress in correctional facilities will be presented in this section of the literature review, which will include international and national research findings.

### **2.7.1. International Research Findings:**

Inmates are more likely to suffer from mental illnesses. Criminals are sentenced to spend years, if not their whole lives, in prison. Why inmates' mental health deteriorates and

they develop mental illnesses while imprisoned is a significant and essential issue that mental health experts are trying to solve. It is also crucial to determine whether a criminal is predisposed to psychiatric illness or if they develop it after being confined. There is a plethora of research and studies from which to choose. Some studies claim that offenders are more likely to develop mental disorders, while others claim that a hostile prison atmosphere promotes mental and physical illnesses (Wormith, 1984, Cooper, 1974; Walker, 1983, Sneha & Garg, 2012).

According to multiple research and meta-analyses, offenders are more likely than the normal community to suffer from mental illness. Anxiety, melancholy, psychoses, personality disorder, and substance misuse are all common psychiatric illnesses among prisoners, and they all raise the risk of suicide (Fazel, Khosla, Doll, & Geddes, 2008; Baillargeon, Penn, Thomas, Temple, & Murray, 2009).

Inmates convicted of serious crimes such as murder, sexual assault, or robbery are required to serve time in jail. Other issues to be concerned about include legal delays, which can lead to discouragement and impotence among inmates awaiting trial, as well as tension, sadness, and anxiety. Research has demonstrated that people who are detained suffer from a variety of mental illnesses and diseases, regardless of the reasons. Anxiety and grief are regularly experienced by the convicts (Birmingham, 2004; Gunter, 2004; Drapalski et. al.2009; Lafortune, 2010).

With 2.24 million individuals incarcerated, the United States has the world's biggest prison population (Glaze, & Danielle Correctional 2013). According to numerous studies, inmates are more likely to develop mental illnesses. This is due to a multitude of factors, including the loss of personal freedoms and opportunities as a result of incarceration, such as social supports, interpersonal relationships, employment, social standing, and societal duties (Osasona and Koleoso, 2015). In a study on the prevalence and link between depression and anxiety disorder in a group of offenders (Samuel & Olaide, 2015), 84.5 percent of convicts had at least one mental disease. Inmates who were awaiting trial and those who had been sentenced both had significantly higher rates of general psychiatric morbidity and anxiety, whereas those who had been condemned to a short term sentence of less than three years had the lowest rates of all forms of psychiatric morbidity. According to the findings, psychiatric morbidity, such as general morbidity, depression, and anxiety, was prevalent.

Anxiety, depression, psychoses, personality disorder, and substance misuse are common psychiatric illnesses among inmates, and they increase the likelihood of criminals committing suicide (Baillargeon, Binswanger, Penn, Williams & Murray, 2009; Fazel, Cartwright, Norman-Nott &, Hawton, 2008). Abdallah, Reuben, Moses, Anne, and Mary (2015) investigated the assessment of mental distress among criminals in Ghana's correctional system. The researchers studied the incidence of mental distress among a small group of detainees at Ghana's Northern Region's Tamale central detention facility. Both male and female inmates took part in the survey. According to the study, the majority of the respondents suffered moderate to severe psychological discomfort in the four weeks leading up to the interviews. In an Iranian review and meta-analysis study involving 1708 prisoners and 12 papers, the pooled magnitude of depression was reported to be 42 percent, with 44 percent of male prisoners and 33 percent of female prisoners suffering from depression (Brink, 2005).

According to another meta-analysis, 10% of male criminals and 12% of female convicts were depressed (Fazel & Seewald, 2012). Depression is more common in developing countries than in developed countries. That might be because, in relation to the health care systems of advanced nations, developing countries' health systems are poorly organized and subsidized. In developing countries, environmental factors that lead to the onset of depression are more prevalent. To name a few, there are high rates of poverty, a dearth of social welfare, and endemic infectious disease (World Health Organization, 2007). Stress and depression are common among jail inmates, according to Birmingham (2004), Gunter (2004), Drapalskiet, Youman, Stuewiw, & Tangney (2009), and Lafortune (2010). Overcrowding (Nurse, Woodcock, & Ormby, 2003), an unsanitary cell environment, and a delay in legal proceedings (under trial ca.) are some other issues in jail that affect prisoners' psychological well-being. Once they get punishment by court, they get stigmatized as offender by society. This stigmatization worries them about their future after release from the prison and leaves most damaging effect on offenders (Schnittker & John, 2007).

### **2.7.2. Local Research Findings**

Berihun, Abel, Teresa, Nigussie, & Telake (2015), studied psychological distress and related factors among detainees in the Amhara regional state of northwestern Ethiopia.

According to the findings, inmates psychological anguish is influenced by their length of stay in prison, their level of satisfaction with correctional facilities (low to none), and the location of the jail. A link has been shown between the length of time spent in prison and an increase in psychological suffering. As a prisoner's release date approaches, they become more stressed. Imprisonment is, on generally, more tough than life in a facility. Inmates face a variety of issues, involving overcrowding, a lack of privacy, and a lack of engaging activities, various forms of violence, social isolation, and poor mental health care.

If inmates were to be released from such an atmosphere, their stress levels would be lessened (Berihun et al, 2015). There is a link between mental health difficulties and satisfaction with correctional services, according to the study. Inmates who were dissatisfied with prison services were three times more likely than those who were satisfied to develop mental health issues. Furthermore, according to this study, the type of incarceration is related to mental distress. For a variety of reasons, this is true.

Teresa, Abel, Berihun, Nigussie, and Telake (2017) investigated depression in Ethiopian prisons to determine how widespread it was and what traits were connected with it. The Patient Health Questionnaire was intended to determine the amount of depression among inmates in a cross-sectional study conducted on an institutional basis. Inmates were said to be depressed to a significant extent. About 43.8% of those surveyed reported signs of depression, according to the study. Previously, 14% of respondents indicated they had a mental illness, and 12.9 % of offenders said one or more family members had been diagnosed with mental illness. Around 33% of those polled believed they would be unable to continue living their former lives after they were released. Nearly 17 out of every 20 convicts, or 83.4 percent, were depressed, while seven out of every 20 inmates, or 36.1 percent, were nervous. According to the study, more than eight out of every nineteen interviewees, or 43.8 percent of the whole sample, were deemed depressed. The level of depression among the region's offenders was surprisingly high.

Regarding the place of incarceration, the study showed that compared to Bahir Dar prison, prisoners in the Gondar and Debre Tabor prisons were more likely to be imitated by depression. According to the authors the possible explanation for this could be age distributions of the prisoners, and since Bahir Dar's prison is in regional level; there may be

facility difference, which might improve prisoners' satisfaction. They argued place of prisons is associated with depression.

## **2.8. Summary of Literature Review**

As it is stated in the literature review section, there are a number of theoretical findings which explains the nature and etiologies of psychological problems of depression, anxiety and stress. In addition, this section tried to indicate the level and prevalence of depression, anxiety and stress among prisoners from the perspective of international as well as local empirical research findings. Moreover, this section also tried to show major contributing etiological factors for these psychological difficulties of depression, anxiety and stress and how these maladaptive variables were shown to influence the psychological health of prisoners in different ways.

However, there is a dearth of research particularly in developing countries such as Ethiopia, where there are a very large number of correction centers with numerous prison population with a various socio- demographic background. Therefore, it is appropriate to conduct studies in the area so that it will be important in tackling the problems related with the mental health of prisoners particularly in showing the prevalence and level of depression, anxiety and stress and determining the group differences among prisoners. Moreover, this section provides theoretical and empirical findings related with the major contributing factors for depression, anxiety and stress among prisoners.

In general, the review literature section of this study comprises literatures related with overview of correction centers and conceptual explanations of psychological constructs of depression, anxiety and stress with their symptoms. In addition, this section also consists of literatures related with psychological assumptions or philosophies of imprisonment. In relation with this, Deterrence philosophy, liberal approach, reformative approach, rehabilitation and restorative justice approaches had been discussed. Moreover, in this section, theoretical explanations of depression, anxiety and stress were discussed. Finally, the literature review section of this study tried to incorporate empirical studies on the prevalence and level of depression, anxiety and stress both at international and national levels.

## CHAPTER THREE

### METHODOLOGY

This chapter covers the following topics: research design, study area, study population, sample and sampling technique, sampling procedure, data gathering tools, data collection procedures, pilot study, data analysis methodologies, and ethical considerations.

#### **3.1. Research Design**

This study employs cross-sectional survey design using quantitative approach. The reason to select this research approach was that, the nature of the basic research questions were in need of some statistical procedures. The research employed a quantitative approach. Quantitative research, according to Creswell (1994), is positivist, experimental, and empirical. The data in this type of study employs statistical models. There are psychological variables /constructs/ that should be measured quantitatively in order to report them meaningfully, that may not be obtained by other approaches. The nature of the data that were collected was also quantifiable which was helpful to identify and report statistical significance of findings.

#### **3.2. Study Setting**

The study was conducted in Kality High Security Correction Center which is one of the largest Federal Correction Centers found in Addis Ababa. It is located in Akaki Kality sub city. The sub city is bordered with the sub cities of Nefas Silk Lafto and Bole. According to the world jail brief online database, this federal prison is one of Ethiopia's major correctional facilities and is run by the federal government. It was founded in 1991 G.C. The inmates come from various sections of the country.

#### **3.3. Study Population**

According to Kaliti High Security Correction Center Human Resource Office, the total population of male prisoners at the time of data gathering was about 1157. Target population in this study was only male prisoners. The study considered male inmates who were found in the Kality high security Correctional Center. The study didn't focus on female prisoners since male and female prisoners were managed under different compounds.

In order to identify the prevalence and level of depression, anxiety and stress and the contributing factors for these psychological variables, those male prisoners who were incarcerated and are convicted for more than six month were the target population for the study.

### 3.4. Sample Size Determination

Krejcie & Morgan (1970) sample size determination formula was used to establish the study's sample size. They also published a table based on this method for calculating the sample size required for a population group, which is a quick and easy reference.

$S = X^2 NP (1-P) \div d^2 (N-1) + X^2 P (1-P)$  where,

S= required sample size

$X^2$  = the table value of chi square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

As a result,  $S=3.841*1157*0.5* 0.5 / ((0.05)^2 *(1157-1)) + (3.841*0.5 *0.5$  has been the sample size **S=317**. Assuming a 10% non-response rate, incomplete surveys, and missing questionnaires, the total number of sample is 317. Out of these 317 sample, 245 questionnaires were filled completely which accounts about 77.28% of the total sample. Therefore, the total sample size for this study was 317 participants.

### 3.5 Sampling Technique

Stratified sampling was used by the researcher. There were six zones in which the inmates were housed. As a result, they were divided into six groups depending on their living zones. The researcher then selected the required number of samples from each zone. Regarding the number of prisoners in each zone, 248 prisoners were in zone 1; 313 prisoners in zone 2; 368 prisoners in zone 3; 79 prisoners in zone 4; 6 prisoners in zone 5; and 143 prisoners were in zone 6. From the total respondents, 63 respondents were sampled from cell 1; 78 respondents were sampled from cell 2; 93 respondents were sampled from cell 3; 18 respondents were sampled from cell 4; 3 respondents were sampled from cell 5; and 33

respondents were sampled from cell 6. A sample of 288 people was taken from the whole population to represent the entire population.

### **3.5. Tools of Data Collection**

The major data collection tool in this study was a questionnaire. The items were written in plain Amharic language. The questionnaire had 3 parts. The first part was about demographic characteristics having 7 questions (age, marital status, having children, number of children, and age of children, religion and educational status). The second section of the questionnaire comprised five 5 questions (previous detention history, type of crime, whether convicted or not, length of punishment and duration of stay in the correction center) which help to gather information related with their offences.

The third part contains 21 items which help to find answers from respondents about their psychological states in the last week. Depression, Anxiety, and Stress Scale was the standardized tool utilized to measure the psychological states of prisoners' in this investigation (DASS-21). The DASS-21 is a widely used scale for evaluating depression, anxiety, and stress. The scale consisted of three self-report subscales, each with seven items that were comparable in substance.

The depression sub-scale measures dysphoria, hopelessness, devaluation of life, self-depreciation, and lack of interest or involvement, anhedonia and inertia. The anxiety subscale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective sensations of anxious affect. The stress subscale measures relaxation difficulty, nervous arousal, agitation, irritability and impatience. On a 4-point severity/frequency scale, participants were asked to rate the severity and frequency of each negative state over the past week (Lovibond & Lovibond, 1995a). Hence to ensure the consistency of the instrument of the study cronbach's alpha was computed. Reliability analysis showed that DASS-21 scale and socio-demographic and prisoner related variables had adequate internal consistency with alpha value of 0.89 and .80 respectively. Another point of focus was validity of the instrument. Special emphasis was given to examine the content validity. Since there is no any statistical method to ensure this, professionals in the field were consulted. Finally, the researcher was able to secure reliable and valid instrument for the main study.

Using a four-point Likert response scale, the three-dimensional self-reporting scale assesses the presence and severity of depressive, anxiety, and stress affective states in the previous week. Each subscale contains seven items with a total score ranging from 0 to 21. As the score increased, so did the levels of sadness, concern, and stress symptoms. The DASS-21 is especially effective since, unlike other tests like the Beck Depression Inventory, it measures depression symptoms rather than depressed disease. In the Australian population, the subscales of depression, anxiety, and stress had a reliability of 0.71, 0.79, and 0.81, correspondingly (Lovibond & Lovibond, 1995a).

According to the DASS manual, the DASS-21 symptom is based on a 4-point severity scale ranging from 0 to 3 measurements, and scores are classified as normal, mild, moderate, severe, and extremely severe for each subscale (Lovibond & Lovibond, 1995b). The lowest possible score is 0, and the highest possible score is 21. The DASS-21 final score can be classified using the cutoff points indicated in Table 1. The stress subscale has items 1, 6, 8, 11, 12, 14, and 18; the anxiety subscale has items 2, 4, 7, 9, 15, 19, and 20; and the depression subscale has items 3, 5, 10, 13, 16, 17, and 21.

The correlation value between the DASS anxiety subscale and the Beck Anxiety Inventory was 0.81, while the correlation coefficient between the DASS depression subscale and the Beck Depression Inventory was 0.74.(Crawford & Henry, 2003).

The DASS was developed and validated in Australian populations, and it showed high internal consistency. The alpha values for the 7-item assessments were: depression 0.81, anxiety 0.73, and stress 0.81.

Separating melancholy from physical arousal, as well as psychological stress and agitation, was successful using the DASS (Antony, Bieling, Cox, Enns & Swinson, 1998). The DASS's reliability estimate was excellent in a previous investigation with a normal population, and it's convergent and discriminant validity was sufficient (Crawford & Henry, 2003). As a result, the 21-item DASS is a self-report measure that is easy to administer, precise, quick to score, and free to use (Lovibond & Lovibond, 1995b), and these characteristics, together with its reliability and validity, make it a popular screening and treatment outcome measure.

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<b>Severity</b>	<b>Depression</b>	<b>Anxiety</b>	<b>Stress</b>
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Normal	0-4	0-3	0-7
Mild	5-6	4-5	8-9
Moderate	7-10	6-7	10-12
Severe	11-13	8-9	13-16
Extremely Severe	13+	9+	16+

**Table 1: DASS -21 Severity Ratings**

Source: Lovibond & Lovibond, 1995b.

### 3.6. Procedures of Data Collection

First, the researcher went to the Federal Prisons Administration with a letter of approval from Addis Ababa University College of Education and Behavioral Studies, School of Psychology, for acquiring the necessary data for the study. Following this contact, the Federal Prison Administration addressed a letter of cooperation to the Kaliti High Security Prison Center, requesting that the researcher to collect data from the inmates with the utmost care.

Finally, the researcher contacted the Kaliti High Security Correction Center staffs and discussed the issue, whereby the researcher began collecting data from the participants after gaining their willingness to participate in the data completion activity using the prepared questioners and providing clear instructions on how to complete. The data collection process was facilitated by the psycho social workers of the correction center by assisting the researcher in selecting the respondents, distributing the questionnaires and collecting from the respondents from different zones of the correction center. The data collection from the study participants had taken place in the correction center and had no time limit to fill a questionnaire. Moreover, the study participants were informed to provide their own responses and that there were no correct or wrong responses. The instrument was administered on individual basis by the researcher and the assistants on the particular week days for consecutive 10 days.

### **3.7. Pilot Study**

The purpose of the pilot survey was to check the reliability of the tool, the total amount of time required for completion and response categories of the translated version of the instrument as a whole were clear and comprehensible to respondents. Therefore, the responses of the pilot group were subjected to item analysis and correlation of items with the overall score was computed. In a pilot study, the feasibility of the analysis and the instruments' suitability for assessing the trait in question were verified. The pilot study's findings were used to make necessary changes and to modify confusing alternatives respondents.

### **3.8. Method of Data Analysis**

Both descriptive and inferential statistical methods were used to analyze the data. The study tried to analyze the socio-demographic characteristics of participants and the level and prevalence of depression, anxiety and stress by using descriptive statistics (Number, frequency and percentage values).

In order to analyze group differences in depression, anxiety and stress score due to socio demographic variables, One Way ANOVA was employed. One Way ANOVA was used to examine the differences in depression, anxiety and stress among prisoners in terms of age group, marital status, having children, religion, and educational status. When ANOVA results showed significant differences, Post hoc test were conducted in an attempt to identify the specific difference. On the other hand, when assumptions of homogeneity of variance was met, Tukey's honestly significant difference (HSD) post hoc test was used. Furthermore, multiple regression analysis was employed to determine independent variables (Socio-demographic and Prisoner related variables combined) having the potential to predict the psychological disturbances particularly related with depression, anxiety and stress. Employing these statistical methods were possible after checking the assumptions and no violations of these assumptions was taken into consideration.

### **3.9. Ethical Consideration**

Because the study required the use of human volunteers, ethical considerations were taken into account. The study was approved by the Federal Prisons Administration. Firstly,

the Prison Administration was informed about the research purpose, and permission was granted. The detainees were informed a right to not reveal their personal identities to get the trust and the study's goal and objectives were made clear. All participants were informed that the study was confidential and anonymous, and that their participation was completely voluntary. Hence, they granted their verbal, informed consent. As a final note, up on any feeling of discomfort during giving response for the questionnaires, participants were also informed that they have the right to withdraw from the participation.

## CHAPTER FOUR

### RESULTS

The findings and interpretations of the data are presented in this chapter, which is divided into two sections. The first section presents a socio-demographic profile and statistics on offenders based on frequency, percentage, mean, and standard deviation. In the second section, one way-ANOVA and multiple regression analysis were used to determine whether there were a statistically significant difference among prisoners in depression, anxiety and stress in terms of age, marital status, having children, educational status, type of crime, length of sentence and duration of stay difference in the correction center.

**Table 2. Socio-Demographic characteristics of Participants in Kaliti High Security Correction Center (N=317)**

<i>Variable</i>	<i>Category</i>	<i>Frequency (%)</i>
Age group	Below-35 years	141(57.55)
	36-55 years	94(36.36)
	Above 55 years	10(4.08)
Marital status	Married	143(58.4)
	Single	84(34.3)
	Divorced	8(3.3)
	Widowed	6(2.4)
	Others	4(1.6)
Having children	Yes	162(66.12)
	No	83(33.87)
Number of children	1	52(32.09)
	2	75(46.29)
	3	23(14.19)
	4	6(3.7)
	5	6(3.7)
Age of children	0-1years	13(5.3)
	2-3years	44(18)
	3-6 years	36(22)
	6-11 years	57(34.8)
	12-18 years	17(8.5)

Religion	Orthodox	156(64.)
	Muslim	37(15)
	Catholic	6(2.4)
	Protestant	37(15.1)
	Others	7(2.8)
Educational status	Illiterate	29(11.8)
	Read and write	11(4.5)
	Elementary school completed	28(11.4)
	Secondary school completed	100(40.8)
	College and higher education	77(31.4)

A Total of 288 participants were included in this study. In the socio-demographic variables, variables such as age, marital status, having children, religion, and educational status) were examined. In addition, prisoner related variables of prisoners such as type of crime committed, periods of time the prisoner is punished, period of stay in the correction center were also assessed.

As it can be clearly seen in table 2 above, the responses of 288 participants who were able to complete the questionnaires were analyzed. When we look at the respondents by their age , majority (141; 57.55%) of the respondents were between the age range of 18-35 years, followed by 36-55 years (94;36.36%),and above 56 years old (10;4.08%) in that order.

Analysis of marital status indicates that majority (58.4%) of prisoners (n=143) were married, 84(34.3%) were single, 8(3.3%) were divorced, 6(2.4%) were widowed, and 4(1.6%) were others respectively. When looking at whether the respondents had child/children, most of the participants (162; 66.12%) reported that they have children. Out of these 75(46.29%) prisoners reported to have two children.

Regarding the age of the child or children of the respondents, majority (57; 23.3%) were in the age group of 6-11, followed by 2-3 years (44, 18%). According to the data provided, most of the respondents (n=100; 40.8%) had educational status of secondary school completed education, followed by 77(31.4%) college & higher education completed, and the least of the respondents 2(8%) were illiterate.

**Table 3: Prisoner Related Characteristics of Respondents in Kaliti High Security Correction Center (N=288)**

<b>Characteristics</b>	<b>Category</b>	<b>Frequency (%)</b>
Previous detention history	Yes	13(5.3)
	No	232(94.7)
Type of crime	Killing	84(34.3)
	Theft	77(31.4)
	Drug trafficking	8(3.3)
	Corruption	8(3.3)
	Sexual abuse	7(2.9)
	Others	61(24.9)
Whether convicted or not	Yes	243(99.2)
	No	2(0.8)
Length of punishment	6 Months-2 years	23(9.4)
	3 years-5 years	74(30.3)
	6 years -10 years	37(15.2)
	Above 10 years	109(44.7)
	Life time imprisonment	1(0.4)
Duration of stay in the correction center	6 Months-2 years	96(39.2)
	3 years -5 years	72(29.4)
	6 years-10 years	44(18)
	Above 10 years	33 (13.5)

Based on the response of participants, majority of respondents, 232; 94.7%) had no previous history of detainance. According to the data provided, majority of the prisoners' were sentenced by committing killing/murder. Based on the response collected from the participants most of the prisoners' were convicted which constituted 243(99.2%). Analysis of the period of sentence of prisoners depicts that majority (44.5%) of the prisoners (n=109) were above 10 years. Regarding the length of period of stay since sentenced, majority of the respondents 96(39.2%) were from 6 months – 2 years.

#### 4.1. Prevalence and Level of Depression, Anxiety and Stress among Convicted Prisoners

**Table 4: Prevalence of Depression, Anxiety and Stress among Prisoners in Kaliti High Security Correction Center**

	<i>Number</i>	<i>Percent</i>
Depression		
Normal	54	22.0
Mild	38	15.51
Moderate	69	28.16
Severe	42	17.14
Extremely severe	42	17.14
Anxiety		
Normal	91	37.14
Mild	42	17.14
Moderate	38	15.51
Severe	45	18.36
Extremely severe	29	11.83
Stress		
Normal	86	35.10
Mild	45	18.36
Moderate	46	18.77
Severe	38	15.5
Extremely severe	30	12.24

*\*Note. a Depression was scored as: Normal(0-4), Mild(5-6), Moderate(7-10), Severe(11-13) and Extremely severe(>13). bAnxiety was scored as: Normal(0-3), Mild(4-5), Moderate(6-7), Severe(8-9) and extremely severe( >9). cStress was scored as: Normal(0-7), Mild(8-9), Moderate(10-12), Severe(13-16) and Extremely severe(>16).*

Table 4 above reveals that depression, anxiety and stress scores among convicted prisoners. In this study, the scores from each of the dimension were added up separately, then the depression, anxiety and stress were divided in to 5 categories, which were normal, mild, moderate, severe and extremely severe categories based on the DASS -21 manual.

From the total of 245 respondents who participated in this study, the total prevalence of depression was found to be 78 % according to Depression, anxiety and stress scale-(DASS-21). Among those prisoners with depression, 28.16% and 15.51% had moderate and mild depressive symptoms respectively. The remaining 17.14% or 34.28 % of prisoners had severe and extremely severe depressive symptoms. About 22 % of the prisoners were having normal depression subscale scores of DASS-21.

Regarding the status of anxiety, 37.14% of the respondents were free from it. About 62.84% of the respondents had mild to extremely severe anxiety symptoms according to DASS-21 anxiety subscale score. Among with those respondents with the symptoms of anxiety problems, 17.14% and 15.51% had mild and moderate anxiety symptoms respectively. About 18.36% of the respondents had severe anxiety symptoms and 11.83% of the respondents had extremely severe anxiety problems as per the DASS-21 scoring standards. Moreover, 64.87% of the respondents were found to have stress according to the DASS-21 cut scores. Among those prisoners' with symptoms of stress, 18.77% and 18.36% had moderate and mild stress symptoms respectively. About 15.5% and 12.24 % of the respondents had severe and extremely severe stress symptoms correspondingly. About 35.10% of the respondents were having normal stress subscale of DASS-21 manual.

**Table 5: One-Way ANOVA Summary Comparing Prisoners Level of Depression, Anxiety and Stress by Age Difference**

Variable	Age category	N	Mean	Df		F	Sig.
				B/n group	W/n group		
Depression	18-35 years	141	8.25	2	242	33.183	.000
	36-55 years	94	11.47				
	Above 56 years	10	7.57				
Anxiety	18-35 years	141	8.25	2	242	60.037	.000
	36-55 years	94	11.47				
	Above 56 years	10	7.57				
Stress	18-35 years	141	8.25	2	242	57.977	.000
	36-55 years	94	11.47				
	Above 56 years	10	7.57				

As it is indicated in table 5 above, a one- way between groups analysis of variance was conducted to examine group differences in the level of depression among prisoners due to differences in age. Participants were divided in to three groups according to their age (Group 1: 18-35 years; Group 2: 36-55 years and Group 3: above 56 years. Results of the analysis of One way- ANOVA revealed that there was a statistically significant difference at the  $p < .05$  level in the level of depression among prisoners due to the differences in age for the three groups ,  $F(2,242) = 33.183, p = .01$ .

Similarly, table 5 above also shows that there was a statistically significant difference at the  $p < .05$  level in the level of anxiety among prisoners due to differences in age among,  $F(2,242) = 60.037, p = .01$ .

As it is indicated in table 5 above, to check whether there is a statistically significant difference in scores of stress due to differences in age, one way- ANOVA was conducted. The results of the analysis of One way-ANOVA revealed that there was a statistically significant difference at the  $p < .05$  level in the level of stress due to differences in age,  $F(2,242) = 57.977, p = .01$ .

**Table 6: One-Way ANOVA Summary Comparing Prisoners by Level of Depression, Anxiety and Stress by Marital Status**

Variable	Marital status	N	Mean	Df		F	Sig.
				B/n group	W/n group		
Depression	Married	143	7.93	4	240	18.447	.000
	Single	84	12.16				
	Divorced	8	15.25				
	Widowed	6	15.00				
	Others	4	15.25				
Anxiety	Married	143	5.39	4	240	32.8	.000
	Single	84	11.55				
	Divorced	8	15.00				
	Widowed	6	14.66				
	Others	4	15.00				
Stress	Married	143	5.93	4	240	32.09	.000
	Single	84	11.63				
	Divorced	8	14.87				
	Widowed	6	14.33				
	Others	4	14.50				

\* $P < .05$

As it is stated in table 6 above, to identify the level of depression score differences among prisoners based on marital status, one way-ANOVA was performed. The results of the analysis of One way- ANOVA revealed a statistically significant difference in the level of depression scores at the  $p < .05$  level in the level of depression due to differences in marital status,  $F(4,240) = 18.447, p = .01$ .

To exactly identify the group(s) which had such differences, post hoc (posteriori) test was performed. LSD Honestly significant difference (HSD) multiple comparison test revealed that prisoners who were married mean score (7.93) were statistically and significantly different from single (12.16), divorced (15.25), widowed (15.00) and others (15.25) in the level of depression. On the other, the mean scores of single, divorced, widowed and others did not show statistically significant difference in the level of depression.

As indicated in Table 6 above, to examine group differences in anxiety scores between married, single, divorced, widowed and other categories of respondents, one way-ANOVA was performed. Based on the results of the analysis of One way-ANOVA, there was a statistically significant difference between groups  $F(4,240) = 32.817, p = .01$ . To identify which mean scores were different from which other mean, Post hoc comparison specifically HSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were married mean score (5.33) were statistically and significantly different from single (11.55), divorced (15.00), widowed (14.66), and others (15.00) in the level of anxiety score. On the other, the mean scores of single, divorced, widowed and others did not show statistically significant difference in the level of anxiety.

Similarly, to see the level of stress among prisoners due to group differences in marital status among prisoners, one way-ANOVA, was conducted. The results of One way – ANOVA revealed that there was a statistically significant difference between groups in the scores of stress,  $F(4,240) = 32.09, p = .01$ . To identify which mean scores were different from which other mean, Post hoc comparison specifically LSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were married mean score (5.93) were statistically and significantly different from single (11.63), divorced (14.87), widowed (14.33), & others (14.50) in the level of stress score. On the other, the mean scores of single, divorced, widowed and others did not show statistically significant difference in the level of stress.

**Table 7: One-Way ANOVA Summary Comparing Prisoners Level of Depression, Anxiety and Stress by Having Children**

Variable	Having children	N	Mean	Std. Deviation	Df		F	Sig.
					B/n group	W/n group		
Depression	Yes	162	7.89	4.78	1	243	109.49	.000
	No	83	13.86	2.82				
Anxiety	Yes	162	5.50	4.87	1	243	184.18	.000
	No	83	13.49	3.13				
Stress	Yes	162	6.09	4.72	1	243	164.06	.000
	No	83	13.26	2.68				

\* $P < .05$

As it is stated on table7 above, a one way-ANOVA was carried out to find out if there exists a variation in the level of depression among prisoners in terms of having children. The results have shown that there was a statistically significant difference,  $F(1,243) = 109.488$ ,  $P = .01$ .

In addition, a one way-ANOVA was conducted to find out if there exists a difference in anxiety score among prisoners due to having children. The results of the analysis shown that there were a statistically significant difference in anxiety scores due to having or not having children,  $F(1,243) = 184.177$ ,  $p = .01$ . Similarly, A one way –ANOVA was carried out to check whether there is a difference in stress scores among prisoners due to having children or not . Based on the results of the One way-ANOVA, there was a statistically significant difference in stress scores due to weather having children or not having children,  $F(1,243) = 164.063$ ,  $p = .01$ .

**Table 8: One-Way ANOVA Summary Comparing Prisoners Level of Depression, Anxiety and Stress by Religious Status**

Variable	Religion	N	Mean		Std. Deviation	Df		F	Sig.
			B/n group	W/n group					
Depression	Orthodox	156	7.85	4.82	4	240	26.611	.000	
	Muslim	37	12.35	3.19					
	Catholic	6	12.50	2.81					
	Protestant	39	14.48	2.95					
	Others	7	15.29	1.88					
Anxiety	Orthodox	156	5.42	4.80	4	240	42.537	.000	
	Muslim	37	12.21	3.59					
	Catholic	6	13.83	3.81					
	Protestant	39	14.46	3.96					
	Others	7	14.85	2.73					
Stress	Orthodox	156	5.98	4.67	4	240	40.007	.000	
	Muslim	37	12.27	3.16					
	Catholic	6	12.83	3.06					
	Protestant	39	13.35	3.07					
	Others	7	14.57	2.93					

\* $P < .05$

A one-way between groups analysis of variance conducted to explore the difference in religious status on the level of depression. Participants were divided in to five groups according to their religious status (Group 1: Orthodox; Group 2: Muslims; Group 3: Catholic, Group 4: Protestant; and Group 5: Others). There was a statistically significant difference at the  $P < .05$  level in depression scores for the five groups due to the differences in religion,  $F(4,240) = 26.611$ ,  $p = .01$ . To identify which mean scores were different from which other means, Post hoc comparison specifically LSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were Orthodox mean score (7.85) were statistically and significantly different from Muslims (12.35), Catholic (12.50), Protestant (14.48), & Others (15.28) in the level of depression. On the other hand the LSD test indicated that there was statistically significant difference in the mean score of Muslim ( $M = 12, 35$ ,  $SD = 3.19$ ) with the man scores of protestants ( $M = 14.48$ ,  $SD = 2.95$ ).

In addition, a one way-ANOVA was carried out to see whether there was statistically significant difference in anxiety scores due to differences in religion among prisoners. Based on the results of the One way-ANOVA, there was a statistically significant difference in the level of anxiety scores due to variation in religion,  $F(4,240) = 42.537, p = .01$ . To identify which mean scores were different from which other means, Post hoc comparison specifically LSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were orthodox mean score (5.42) were statistically and significantly different from Muslims (12.21), Catholic (13.83), Protestant (13.46), others (14.85) in the level of anxiety. However, the LSD test did not show statistically significant difference in the mean scores of the other groups.

Similarly, A One way- ANOVA was conducted to check whether there is difference in stress scores due to differences in religion among prisoners. Based on the results of the One way –ANOVA, there is a statistically significant difference in the level of stress scores due to variations in religion among prisoners , $F(4,240) = 40.07, p = .01$ . To identify which mean scores were different from which other means, Post hoc comparison specifically LSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were Orthodox mean score (5.98) were statistically and significantly different from Muslims (12.27), Catholic (12.83), Protestant (13.35), others (14.57) in the level of stress. However, the LSD test did not show statistically significant difference in the mean scores of the other groups.

**Table 9: One-Way ANOVA Summary Comparing Prisoners Level of Depression, Anxiety and Stress by Educational Status**

Variable	Educational status	N	Mean	Df		F	Sig.
				B/n group	W/n group		
Depression	Illiterate	29	7.89	4	240	24.136	.000
	Read and write	11	9.81				
	Elementary school completed	28	6.92				
	Secondary school completed	100	8.3				
	College and higher education completed	77	13.84				
Anxiety	Illiterate	29	4.55	4	240	40.49	.000
	Read and write	11	6.45				
	Elementary school completed	28	4.46				
	Secondary school completed	100	6.44				
	College and higher education completed	77	13.49				
Stress	Illiterate	29	5.79	4	240	36.43	.000
	Read and write	11	6.54				
	Elementary school completed	28	4.57				
	Secondary school completed	100	7.00				
	College and higher education completed	77	13.24				

\* $P < .05$

A one –way between groups analysis of variance was conducted to explore the difference in educational status on depression. Participants were divided in to five groups according to their educational status (Group1; Illiterate; Group2; Read & write; Group 3: Elementary school completed; Group 4: Secondary school completed; & Group 5: College and higher education completed). There was a statistically significant difference at the  $p < .05$  level in depression scores for the five educational status groups:  $F(4,240) = 24.136$ ,  $P = .01$ . To identify which mean scores were different from which other means, Post hoc comparison specifically LSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were in educational status of college and higher education completed mean score (13.84) were statistically and significantly different from Illiterate(7.89), read & write(9.81, elementary school completed(6.92), & secondary school

completed(8.33) in the level of depression score. However, the LSD test did not show statistically significant difference in the mean scores of the other groups.

Similarly, According to the results of the One way-ANOVA, there was a statistically significant difference in the scores of anxiety among prisoners due to the variations in educational status,  $F(4, 240) = 40.492, p = .01$ . To identify which mean scores were different from which other means, Post hoc comparison specifically LSD post hoc multiple comparison test was conducted. Results showed that mean score of those prisoners who were in educational status of college and higher education completed mean score (13.84) were statistically and significantly different from Illiterate(4.55), read & write(6.45), Elementary school completed(4.46), & Secondary school completed(6.44) in the level of anxiety. However, the LSD test did not show statistically significant difference in the mean scores of the other groups.

In addition, the results of One way-ANOVA indicated that there is a statistically significant difference in the level of stress among prisoners due to the difference in educational status  $(4,240) = 36.431, p = .01$ . To identify which mean scores were different from which other means, Post hoc comparison specifically LSD multiple comparison test was conducted. Results showed that mean score of those prisoners who were in educational status of college and higher education completed mean score(13.49) were statistically and significantly different from Illiterate(5.79), Read & write(6.54), Elementary school completed(4.57), & Secondary school completed(7.00) in the level of stress. However, the LSD test did not show statistically significant difference in the mean scores of the other groups.

## **4.2. The Relationship between Socio-Demographic and Prisoner Related Variables with Depression, Anxiety and Stress**

Multiple regression analysis was performed to determine the predicting power of the socio-demographic and prisoner related variables on the dependent variables of depression, anxiety and stress. Factors included as predictors include age, marital status, having children, religious status of the respondent, educational status of the respondent, type of crime committed by the respondent, number of time the respondents had punished and the period of

stay the prisoner had in the correction center. The variance explained by joint and each predictor variables on the outcome variables (depression, anxiety and stress) were examined. Prior to conducting the regression analysis, assumptions of normality of residuals, homoscedasticity (equal distributions of residuals) and the absence of multi-collinearity were checked using the appropriate statistical procedures.

**Table 10: Stepwise Multiple Regression Analysis of Predicting Power of the Independent Variables for Depression Scores**

<i>R</i>	<i>R squared</i>	<i>Adjusted R squared</i>	<i>Sig</i>
.583	.339	.317	.000

The value (.583) in the R squared column of table 10 above indicates a moderate relationship between the outcome variable (depression) and all the independent variables combined indicating a good predicting capacity of the model. Moreover, the value in the R-squared column shows the model (socio demographic and prisoner related variables combined) explained 33.9 % of the variance in the dependent variable. To check whether the model significantly predicts the outcome variable, Analysis of variance was performed. As it is shown in the table above, the Sig. value was less than the alpha value of .05. Therefore, it is possible to conclude that the outcome variable was significantly predicted by the regression model,  $F(8,236) = 15.160$ ,  $P = .000$ .

**Table 11: The Contribution of Independent Variables to Dependent Variable (Depression Scores)**

<b>Independent variables</b>	<b><math>\beta</math></b>	<b><i>Adjusted R squared</i></b>	<b><i>Sig.</i></b>
Age	.155	-	.304
Marital status	-.131	-	.320
Religion	.122	-	.075
Educational status	-.118	-	.140
Type of crime	-.020	-	.469
Number of punishment time	.025	-	.831
Period of stay	-.203	-	.122
Having children	.759	.317	.000

\* $P < .05$

Step wise multiple regression analysis was conducted to determine the best predictors of depression. From table 11 above, it is possible to understand that predictor variables such as age ( $p=.304$ ), marital status ( $p=.32$ ), religious status ( $p=.075$ ), educational status ( $p=.14$ ), type of crime ( $p=.469$ ), number of punishment time ( $p=.83$ ), period of stay ( $p=.12$ ) did not significantly contributed to the regression model. The table further indicates that the only variable that contributed significantly to the regression model was having children ( $p.000$ ). This variable alone had a contribution of 32% for the variance in depression. This means a one –unit increase in depression was associated with .76 points increase in having children.

**Table 12: Stepwise Multiple Regression Analysis of Predicting power of the Independent Variables for Anxiety Scores**

<i>R</i>	<i>R squared</i>	<i>Adjusted R squared</i>	<i>Sig</i>
.669	.447	.428	.000

Similarly, the value (.669) in the R-column of table 12 above indicates that there is a moderate relationship between the outcome variable (Anxiety) and all the independent variables indicating a good predicting ability of the model. Moreover, the value in the R-squared column tells us that the model (socio-demographic and prisoner related variables combined) explained that 44.7% of the variance in the dependent variable. To check whether the model significantly predicts the outcome variable, Analysis of variance was performed. As it is shown in the table above, the Sig value was less than the alpha value of .05. Therefore, it is possible to conclude that the outcome variable was significantly predicted by the regression model,  $F(8,236) = 23.855$ ,  $P = .000$ .

**Table 13: The Contribution of Independent Variables to Dependent Variable (Anxiety Scores)**

<b>Independent variables</b>	$\beta$	<i>Adjusted R squared</i>	<i>Sig</i>
Age	.033	-	.831
Marital status	.001	-	.994
Religion	.093	-	.192
Educational status	.007	-	.929

Type of crime	-.002	-	.932
Number of punishment time	.043	-	.726
Period of stay	-.084	-	.536
Having children	.841	.428	.000

\*P<.05

Step wise multiple regression analysis was conducted to determine the best predictors of Anxiety. Similarly, from table 13 above, we can understand that predictor variables like age (p=.831), marital status (p=.994), religious status (p=.192), educational status (p=.929), type of crime (p=.932), number of punishment time (p=.726), period of stay (p=.726) did not significantly contributed to the regression model. The table further indicates that the only variable that contributed to the significantly to the regression model was having children (p.000). This variable alone had a contribution of 42.8% for the variance in anxiety. This means a one –unit increase in anxiety was associated with .84 points increase in having children.

**Table 14: Stepwise Multiple Regression Analysis of Predicting power of the Independent Variables for Stress Scores**

<i>R</i>	<i>R squared</i>	<i>Adjusted R squared</i>	<i>Sig</i>
<i>.653</i>	<i>.426</i>	<i>.407</i>	<i>.000</i>

Similarly, the value (.653) in the R-column of table 14 indicates that there is a moderate relationship between the outcome variable (Stress) and all the independent variables indicating a good predicting ability of the model. Moreover, the value in the R-squared column tells us that the model (socio-demographic and prisoner related variables combined) explained that 42.6% of the variance in the dependent variable. To check whether the model significantly predicts the outcome variable, Analysis of variance was performed. As it is shown in the table above, the Sig. value was less than the alpha value of .05. Therefore, it is possible to conclude that the outcome variable was significantly predicted by the regression model,  $F(8,236) = 21.924$ ,  $P = .000$ .

**Table 15: The Contribution of Independent Variables to Dependent Variable (Stress Scores)**

<b>Independent variables</b>	<b><math>\beta</math></b>	<b><i>Adjusted R squared</i></b>	<b><i>Sig.</i></b>
Age	-.065	-	.448
Marital status	.072	-	.884
Religion	.111	-	.655
Educational status	-.007	-	.840
Type of crime	-.005	-	.696
Number of punishment time	.062	-	.599
Period of stay	-.161	-	.619
Having children	.769	.407	.000

\*P&lt;.05

Step wise multiple regression analysis was conducted to determine the best predictors of Stress. Similarly, from table 15 above, we can understand that predictor variables like age (p=.8), marital status (p=.448), religious status (p=.884), educational status (.655), type of crime (p=.840), number of punishment time (p=.696), period of stay (p=.599) did not significantly contributed to the regression model. The table further indicates that the only variable that contributed to the significantly to the regression model was having children (p.000). This variable alone had a contribution of 40.7 % for the variance in stress. This means a one –unit increase in anxiety was associated with .769 points increase in having children.

## CHAPTER FIVE

### DISCUSSION

This chapter focuses on analyzing the study's findings in relation to research topics, prior empirical findings, and theoretical models. This section of the research also provides possible explanations for the results of the study presented in chapter four.

#### **5.1. Prevalence and Level of Depression, Anxiety and Stress among Prisoners**

In this study, the prevalence of severe to extremely severe level of depression, anxiety and stress among prisoners in Kaliti High Security Correction Center was 34.28%, 30.19% and 27.74%. This finding is consistent with previous studies that were conducted in different settings. Amour & Cherie, (2012), For instance, in correctional facilities, depression affects 45% of inmates. Similarly, Zakir, Teshome, Lamessa, Workinesh, & Mubarek (2018) reported 41.9 % (three in every seven) prevalence of depression among prisoners in Jimma Town Prison Center. The findings of this study were also comparable to those of Teresa et al (2017), who found depression in more than eight out of nine respondents, accounting for 43.8 % of the total sample. Another local study conducted in Debere Berhan town prison, Ethiopia, by Reta, Getachew, Meles, Betelhem, Workie, & Gebereegziabehere (2020) found that the prevalence of depression among prisoners was 40%.

Some studies, however, have reported a higher prevalence of depressive symptoms. For example, Bedaso et al (2018) discovered a 56.4 % depression frequency among convicts at Hawassa Central Prison in Ethiopia. A similar study conducted in Ethiopia by Necho, Belete, Tsehay, & Zenebe, (2020) reported that the prevalence rate of depressive symptoms among prisoners was 53.40%. Furthermore, previous research that looked at the prevalence of psychiatric illness in a diverse group of offenders discovered that depression was one of the most common diagnosed problem among inmates. In their survey, Birmingham et al. (1996) discovered that depression was the most common mental disorder (18 % of the entire group). In addition, Agbahowe et al (1998) discovered depression in 23% of inmates in a Nigerian research.

In the current study, the prevalence of severe to extremely severe anxiety among prisoners was found to be 30.19%. These findings are consistent with some of the findings of previous researches. The findings of a previous local study done by Abel et al. (2016), in the Amhara Regional State, Ethiopia, which assesses the prevalence of anxiety among prisoners' found that the prevalence of anxiety was 36.1%. Another study finding conducted in Ethiopia by Addisalem Taye (2018) reported that the prevalence of moderate to profound level of anxiety was found to be 31.5%.

In the current study, the prevalence of severe to extremely severe stress among convicts was determined to be 27.74 percent. Consistently, Addis Alem Taye (2018) observed that the prevalence of moderate to profound level of stress was 30.5 percent. However, some research have found a higher prevalence of stress symptoms. According to Berihun et al. (2015), the prevalence of psychological distress among convicts was determined to be 83.4 percent in a prior study conducted in Ethiopia.

## **5.2. Differences in Depression, Anxiety and Stress due to Demographic**

### **Characteristics**

Due to disparities in age, the present study found no differences in depression, anxiety, or stress among convicts. Age differences had no effect on levels of depression, anxiety, or stress, leading to the conclusion that there were no differences in levels of depression, anxiety, or stress among inmates in the Kaliti high security correctional center due to age disparities.

In contrast to the findings of this study, earlier research has found significant differences in depression, anxiety, and stress among convicts as a result of age differences. For example, according to a study conducted by Necho et al. (2015), convicts aged 21 to 30 years have a greater level of depressive symptoms. Furthermore, convicts aged 24 and younger were more sensitive to depression than those aged 55 and up, according to a prior study (James & Glaze, 2006).

Furthermore, offenders above 56 years of age showed significantly higher levels of depression, anxiety, and stress than offenders of other ages, according to Zakir et al. (2018) Miheret (2018) did a similar study at Addis Ababa University, which indicated that age was substantially linked to depression, anxiety, and stress. This means that when the individuals'

age decreases, their psychological difficulties increase. One possible explanation is that some individuals lacked the necessary abilities, experience, and knowledge to deal with the prison scenario. As a result, people's psychological problems get more severe as they age. One argument is that some persons may not have the necessary skills, competence, or understanding to work in a prison.

According to the findings of this study, there is a statistically significant difference in depression, anxiety, and stress levels among participants. Earlier local study findings were also gathered in a few countries. This research backs up findings from studies in Ethiopia's Amhara region and Rio de Janeiro, Brazil, which revealed that widowed criminals are more likely to be unhappy as a result of increased expected parenting responsibilities and the loss of loved ones. The findings of this study were backed up by a previous global survey that demonstrated a link between marital status and depression. Necho, Asmare, Mekonen, & Yoseph (2015) showed that married people are more depressed than single ones. The level of melancholy, worry, and tension among offenders did not differ significantly based on whether or not they had children, according to statistical analysis. Previous research has produced both comparable and dissimilar outcomes. Mihret (2018) found that the number of children in prison is adversely and highly associated to unhappiness, anxiety, and stress in a prior study.

Berihun et al. (2015) also discovered that parents with children employed attention and emotional venting, as well as social support coping mechanisms, in a negative and significant way. This shows that people who had more children were less concerned with expressing emotions and utilizing social assistance. Due to differences in educational status, it was discovered in the current study that there was a statistically significant difference in the level of depression, anxiety, and stress among convicts. Moreover, the post hoc test result indicated that mean score values of participants within the category shows that those prisoners who were in educational status of illiterate were significantly higher compared with the mean scores of participants within the groups who were in educational status of, read and write, elementary school completed, and secondary school completed and college and higher education.

Reta, Getachew, Bahiru, Kale, and Workie (2019) found that convicts with a college or university degree are more likely to be depressed than illiterates in a previous study. Despite

the fact that no research corroborate this conclusion, according to the results of the study, over 70% of convicts acquire just primary education, with only a small percentage (6.3%) obtaining college or university level education. Those who are educated while in prison should expect better treatment and respect, and those who are a minority in prison might expect better treatment and respect, whereas prisons treat all inmates equally.

Reta, Getachew, Meles, Betelhem, Workie, & Gebereegziabehere (2020) finding from a recent Ethiopian study by which demonstrates that offenders in Debere Birhan suffer from depression symptoms and causes. According to the findings of this study, people with a college or university degree were five times more likely to be depressed than those who were illiterates.

### **5.3. Association of Depression, Anxiety and Stress with Socio-Demographic and Prisoner Related Variables.**

The results of the multiple regression analysis showed that having children was associated significantly with depression. This implies that having children and being incarcerated is a risk factor for developing depression. In addition, this study showed that having children was associated significantly with anxiety. This implies that having children and being incarcerated is a risk factor for developing anxiety. Similarly, the findings of this study showed that having children was associated with stress. This implies that having children and being incarcerated is a risk factor for stress.

Contradicting the finding of the current study, studies conducted abroad showed that there was a significant difference among prisoners' in their level and prevalence of psychological difficulty due to the variation in the type of crime committed by the prisoners'. In contrast to the findings of the current study, Judith, Charles, & Peter (2020) discovered that the number of sentences had a substantial impact on the psychological problems of depression, anxiety, and stress. According to the findings of this study, long prison terms are a key contributor to the prevalence of mental disorders. It is expected that increased use of non-custodial alternatives to imprisonment will reduce the occurrence of mental disorders among criminals.

This finding was supported by another previous local cross sectional research finding conducted by Dachew, Azale, & Berhe (2015) in the North West of Ethiopia, which reveals

that long duration of stay in the prison was significantly associated with psychological distress among prisoners. The length of time spent in prison is strongly linked to psychological discomfort. Besides, according to a previous research finding conducted by Miheret (2018), the length of time spent serving the sentence was linked to humor in a good and meaningful way. This could be because as the participants spend more time in prison, they get closer to their release date and start to look forward to it, or they could just acclimate to such an environment.

Reta, Gteachew, Melese, Btelehem, Workie, & Gebereegziabhere (2020), discovered that convicts convicted for 5 to 10 years were two times more likely to be depressed than those imprisoned for less than five years in a previous local study. According to Majumadar & Acharya (2016), inmates who had been incarcerated for two years or less were substantially depressed compared to those who had been incarcerated for more than two years.

Furthermore, an empirical study conducted by Hussien & Aemero, (2016) discovered that time spent in prison had a substantial impact on a prisoner's depression level. According to the results of this study, short-term prisoners are more depressed than long-term inmates. This outcome was consistent with those of a previous study (Adam et al, 1994, Zambel, 1992, and Mackenzie & Goldstein, 1985). They discovered that long-term inmates have lower sentiments of hopelessness and show no signs of progression in their depression scores over time. It also aligns with Dhimi, Ayton, & Loewenstein, (2007), who found that prison time, had a direct impact on prisoners' involvement in programs, views about the desire for control over their lives, feelings of hopelessness, and disciplinary infractions in prison.

Berihun et al. (2015) found that the amount of time spent in prison was significantly associated to psychological suffering. Psychological distress was also associated to satisfaction with prisoner services, according to the research. The same study found that elements associated to the jail setting played a role in the development of depression, anxiety, and stress among inmates. A previous study conducted by Reta et al. (2020) found that prisoners serving long prison terms are more likely to develop depressive symptoms than those serving shorter sentences, indicating mental health issues for those serving more than 5 years in prison.

According to a previous local research result by Addisalem, (2018), time spent in a prison institution influenced the degree and level of depression, anxiety, and stress scores of

prisoners. According to the findings of this study, prisoners who had been in jail for less than a year reported higher levels of depression, anxiety, and stress than those who had been there for longer. Convicts who attend the center for the first time are more likely to experience despair, worry, and tension as compared to those who have been in prison for a long time. Tears, dizziness, dread, and negativity are common symptoms of newly admitted prisoners as well as those awaiting trial.

According to Gunter (2004) and Drapalski et al. (2009), the most stressful time for inmates is when they first enter jail. First-time offenders are especially vulnerable due to the loss of liberty and separation from friends and family. At this stage, denial is prevalent, followed by worry and sadness, as well as some other emotions including shock, fear, loneliness, grief, and wrath. The adjustment period generally lasts 4–6 weeks during confinement. At this point, a lot of people try to commit suicide. On the contrary, according to Howard (1999), those who have been detained for a longer period of time get sad as a result of feelings of guilt, fear, worry, and estrangement.

#### **5.4. Limitation of the Study**

Despite important findings, this study has some limitations. The first limitation of the current study is that the study used self-report measures, which might cause biases in responses. The second limitation of this study is that the study employed cross sectional design which is difficult to establish cause-effect relationship. In this study, although socio-demographic and prisoner related variables are considered as independent variables, it is difficult to determine the outcome variables by socio-demographic and prisoner related variables alone.

## CHAPTER SIX

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 6.1. Summary

The study's main purpose was to find out how common depression, anxiety, and stress were and how severe they were. The study investigated the prevalence and level of depression, anxiety, and stress among male inmates at the Kaliti High Security Correctional Center. Moreover, the study attempt to examine how much differences in depression, anxiety and stress exists among prisoners in relation to demographic factors such as age, marital status, having children, Religious status and educational status. Finally, the study attempts to examine the significant contributing causal factors for depression, anxiety and stress by trying to focus on socio demographic and prisoner related variables.

The study used a quantitative research approach to attain the stated objectives. Using a stratified sampling method, data was obtained from a total of 288 respondents. The data was analyzed using descriptive and inferential statistical methods. Frequency, mean, standard deviation, one-way ANOVA and multiple regression analysis were among the approaches utilized. When employing inferential statistics, assumptions were considered. The survey revealed that 78 percent of those who took part felt depressed. 62.84% of prisoners' had anxiety symptoms, while 64.87 % had stress symptoms. There was a statistically significant difference in the level of depression, anxiety and stress due to variations in age, marital status, having children, religious status and educational status among the convicts, according to the quantitative data analysis.

#### 6.2. Conclusion

Based on the findings of the present study, the researcher had made the following conclusions.

Level of depression, anxiety and stress is a growing concern among prisoners in Kaliti Sigh Security Correction Center. This indicates that a sizable number of prisoners experience frequent and severe symptoms of depression, anxiety and stress. According to the quantitative data analysis of this study, prisoners significantly vary in their level of depression, anxiety and stress symptoms due to the variation in their age, marital status,

having children, religious status and educational status. Furthermore, socio-demographic and prisoner related variables are statistically and significantly associated with psychological problems of depression, anxiety and stress.

### **6.3. Recommendations**

The researcher has made the following recommendations based on the findings and conclusions of the current study:

- ❖ As the prevalence and severity of depression, anxiety, and stress among inmates in Kaliti High Security Correction Center is increasing, the concerned administrative bodies should properly understand the severity of these psychological problems.
- ❖ The counselors and social workers should properly understand the differences among prisoners due to the variations in their socio- demographic characteristics in order to help them to provide interventions tailored with the unique problem of the prisoners.
- ❖ The professionals working closely with prisoners especially the counselors, the social workers and the health workers should adequately understand the contributing factors of those prisoner related variables for the occurrence of depression, anxiety and stress which can exacerbate the psychological health of prisoners in order to adequately modify these problems and to ultimately promote their psychological health.

## References

- Abdallah, I, Reuben, K.E, Moses, A, Anne, M.O & Mary, M.M. (2015). *Assessment of mental distress among prison inmates in Ghana's correctional system: A cross-sectional study using the Kessler Psychological Distress Scale*. International Journal of Mental Health Systems.
- Abdu, Z, Kabeta, T, Dube, L, Tessema W, Abera, M. *Prevalence and Associated Factors of Depression among Prisoners in Jimma Town Prison, South West Ethiopia*. Psychiatry J. 2018 Jun 19; 2018:5762608. doi: 10.1155/2018/5762608. PMID: 30018974; PMCID: PMC6029452.
- Abel, F.D, Berihun, A.D, Teresa, K, Nigussie Y, & Telake, A. (2016), *Anxiety and associated factors among prisoners in North West of Amhara Regional State, Ethiopia*.
- Abramson, L.Y., Seligman, M.E.P., and Teasdale, J.D. (1978). *Learned helplessness in humans: Critique and reformulation*. Journal of Abnormal Psychology, 87, 49–74.
- Adams, K., Bennett, K. J., Flanagan, T., Marquart, J., Cuvelier, S. and Fritsch, E. et al. 1994. *A large-scale multidimensional test of the effect of prison programs on offenders' behavior*. The prison journal 74(4):433-449. Doi:10.1177/03285555994074004004.
- Addisalem Taye (2018). *Prevalence of depression, anxiety and stress among criminal detainees: With Reference to Mizan Teferi Criminal Correction Center, South West Ethiopia*. Ethiop.j.soc.lang.stud, Vol.5.No.1, pp.67- 85. eISSN: 2408-9532; pISSN: 2412-5180. ISBN: 978-99944-70-78-5.
- Addisu, G. (2012). *The human rights of detained persons in Ethiopia: A case study in Addis Ababa (Unpublished master's thesis)*. Addis Ababa University, Addis Ababa, Ethiopia.
- Agbahowe, S. A., Ohaeri, J. U., Ogunlesi, A. O., & Osahon, R. (1998). *Prevalence of psychiatric morbidity among convicted inmates in a Nigerian prison community*. East African medical journal, 75(1), 19–26.
- Ali Mohammed, (2018). *Compatibility of neuro muscular performance and its relationship to my skills accurately handling the long- peaceful and scoring basketball*. University of Misan.

- Alloy, L.B., Abramson, L.Y., Smith, J.M., Gibb, B.E., and Neeren, A.M. (2006). *Role of parenting and maltreatment histories in unipolar and bipolar mood disorders: Mediation by cognitive vulnerability to depression*. *Clinical Child and Family Psychology Review*, 9, 23
- American Psychological Association. (2010) *Publication manual of the American Psychological Association*
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). *Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample*. *Psychological Assessment*, 10(2), 176-181. <https://doi.org/10.1037/1040-3590.10.2.176>
- Baillargeon, J., Penn, J. V., Thomas, C. R., Temple, J. R., Baillargeon, G., & Murray, O. J. (2009). *Psychiatric disorders and suicide in the nation's largest state prison system*. *The journal of the American Academy of Psychiatry and the Law*, 37(2), 188–193
- Barlow, H. (2004). *Anxiety and Its Disorders: The Nature and Treatment of Anxiety and Panic*. Guilford press, New York
- Bedaso, A., Kediro, G. & Yeneabat, and T. *Factors associated with depression among prisoners in southern Ethiopia: a cross-sectional study*. *BMC Res Notes* 11, 637 (2018).<https://doi.org/10.1186/s13104-018-3745-3>
- Belay, M. (2018). *The psychosocial challenges and coping mechanisms of female prison inmates incarcerated in Kaliti federal prison in Ethiopia Addis Ababa*. Addis Ababa University.
- Berihun, A.D, Abel, F, Teresa, K, Nigussie, Y, Telake, A.B. (2015), *Psychological distress and associated factors among prisoners in North West Ethiopia: cross-sectional study*.
- Birmingham, L. (2004). *Mental Disorder and Prisons*. *Psychiatric Bulletin*, 28, 393-397
- Blackburn, R. (1993). *Wiley series in clinical psychology. The psychology of criminal conduct: Theory, research and practice*. John Wiley & Sons.
- Bouton, M. E., Mineka, S., & Barlow, D. H. (2001). *A modern learning theory perspective on the etiology of panic disorder*. *Psychological Review*, 108, 4–32.

- Bowlby, J. (1977). *The making and breaking of affectional bonds: A etiology and psychopathology in the light of attachment theory*. *British Journal of Psychiatry*, 130, 201–210.
- Brinded, P, Simpson A, Laidlaw T., Fairley N, Malcolm, F. (2001). *Prevalence of psychiatric disorders in New Zealand prisons: A national study*. *Australian and New Zealand Journal of Psychiatry*, 3
- Brink, Johann, *Epidemiology of mental illness in a correctional system*, *Current Opinion in Psychiatry*: September 2005 - Volume 18 - Issue 5 - p 536-541 doi: 10.1097/01.yco.0000179493.15688.
- Brown, G.W., & Harris, T. (Eds.). (1978). *Social Origins of Depression: A study of psychiatric disorder in women* (1sted.). Routledge. <https://doi.org/10.4324/9780203714911>
- Butler T, Allnutt S, Cain D, Owens D, Muller C. *Mental disorder in the New South Wales prisoner population*. *Aust N Z J Psychiatry*. 2005 May; 39(5):407-13. doi: 10.1080/j.1440-1614.2005.01589.x. PMID: 1586003
- Calvete, E., Corral, S., and Estevez, A. (2007). *Cognitive and coping mechanisms in the interplay between intimate partner violence and depression*. *Anxiety, Stress and Coping*, 20, 369–3
- Campbell, J.C. (2002). Health consequences of intimate partner violence. *The Lancet*, 359, 1331–1336. 82
- Caspi, A., Sugden, K., Moffitt, T.E., Taylor, A., Craig, I.W., Harrington, H., McClay, J., Mill, J., Martin, J., Braithwaite, A., and Poulton, R. (2003). *Influence of life stress on depression: Moderation by a polymorphism in the 5-HTT gene*. *Science*, 301, 386–389
- Cassidy, J. (1999). *The nature of the child's ties*. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 3–20). New York, NY: Guilford Press.
- Castellano, T. C. & Soderstrom, I. R. (1997). 'Self Esteem, Depression, and Anxiety Evidenced by a Prison Inmate Sample: Interrelationships and Consequences for Prison Programming'. *The Prison Journal*, 77 (3): 259-280.
- Clark, D.A., Beck, A.T., and Alford, B.A. (1999). *Scientific Foundations of Cognitive Theory and Therapy of Depression*. New York: Wiley

- Coryell, W., Scheftner, W., Keller, M., Endicott, J., Maser, J., and Klerman, G.L. (1993). *The enduring psychosocial consequences of mania and depression*. *American Journal of Psychiatry*, 150, 720–727
- Coyne, J.C. (1976). *Depression and the response of others*. *Journal of Abnormal Psychology*, 85, 186–193.
- Coyne, J.C., Thompson, R., and Palmer, S.C. (2002). *Marital quality, coping with conflict, marital complaints, and affection in couples with a depressed wife*. *Journal of Family Psychology*, 16, 26–37.
- Crawford, J. R., & Henry, J. D. (2003). *The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample*. *British Journal of Clinical Psychology*, 42(2), 111–131. <https://doi.org/10.1348/014466503321903544>
- Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). *Qualitative Research Designs: Selection and Implementation*. *The Counseling Psychologist*, 35(2), 236–264.
- Cullen, F. T., Jonson, C. L., & Nagin, D. S. (2011). *Prisons Do Not Reduce Recidivism: The High Cost of Ignoring Science*. *The Prison Journal*, 91(3\_suppl), 48S-65S.
- Dachew, B. A., Azale Bisetegn, T., & Berhe Gebremariam, R. (2015). *Prevalence of mental distress and associated factors among undergraduate students of University of Gondar, Northwest Ethiopia: a cross-sectional institutional based study*. *PLoS one*, 10(3), e0119464.
- David, S. & Nick, F. (2014), *Prisons and Punishment*.
- Davila, J., Karney, B.R., Hall, T.W., and Bradbury, T.N. (2003). *Depressive symptoms and marital satisfaction: Within-subject associations and the moderating effects of gender*
- Deaton, C. (2005). *Humanizing prisons with animals: A closer look at "cell dogs" and horse programs in correctional institutions*. *Journal of Correctional Education*, 56(1), 46–62.
- Dhami, M. K., Ayton, P., & Loewenstein, G. (2007). *Adaptation to Imprisonment: Indigenous or Imported?* *Criminal Justice and Behavior*, 34(8), 1085–1100. <https://doi.org/10.1177/0093854807302002>

- Drapalski, A.L. Youman, K. Stuewig, J. & Tangney, J. (2009). *Gender differences in jail inmates' symptoms of mental illness, treatment history and treatment seeking. Criminal Behavior and Mental Health, 19*, 193- 206.
- Dyussenbayev, A. (2017). Age Periods of Human Life. *Advances in Social Sciences Research Journal, 4*(6). <https://doi.org/10.14738/assrj.46.2924>
- Eberhart, N., and Hammen, C. (2009). Interpersonal predictors of stress generation. *Personality and Social Psychology Bulletin.*
- EHRC. (2012). *International covenants of human rights*. Addis Ababa:
- Fazel, S., Khosla, V., Doll, H., & Geddes, J. (2008). The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. *PLoS medicine, 5*(12), e225. <https://doi.org/10.1371/journal.pmed.0050225>
- Federal Democratic Republic of Ethiopia (MoH): *National mental health strategy 2012/13-2015/16, Addis Ababa, Ethiopia.*
- Field, A. P., Hadwin, J. A., & Lester, K. J. (2011). Information processing biases in child and adolescent anxiety: A developmental perspective. *Research, assessment, and intervention* (2nd ed.). Cambridge, United Kingdom: Cambridge University Press.
- Fine, A. H. (2006). *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice* (2nd ed.). Boston: Elsevier/Academic Press.
- Fraser, A. (2014). Primary health care in prisons. In Enggist, S., Møller, L., Galea, G., & Udesen (Eds.), *Prisons and Health, 173-179*, Europe.
- Fraser, A., Gatherer, A. & Hayton, P. 2009. *Mental health in prisons: Great difficulties but are there opportunities*. *Public Health, 123*: 410-]414.
- Gavin, H. 2014. *Criminological and Forensic Psychology*. London: SAGE.
- Gibb, B.E., Beevers, C.G., Andover, M.S., and Holleran, K. (2006). *The hopelessness theory of depression: A prospective multi-wave test of the vulnerability-stress hypothesis*. *Cognitive Therapy and Research, 30*, 763–772
- Glaze & Danielle (2013). *Correctional population in the united states* .United States department of justice. Office of justice programs: bureau of justice statistics.
- Golding, J.M. (1999). *Intimate partner violence as a risk factor for mental disorders: A meta-analysis*. *Journal of Family Violence, 14*, 99–132.

- Gulilat, A. (2012). *The human rights of detained persons in Ethiopia: Case study in Addis Ababa*. Unpublished MA Thesis. Addis Ababa University.
- Gunter, T.D. (2004). Incarcerated women and depression: A primer for the primary care provider. *Journal of the American Medical Women's Association*, 59(2), 107-112.
- Hammen, C. (2005). *Stress and depression. Annual Review in Clinical Psychology*, 1, 293–319.
- Harper & C. Chitty, (2004). “*The Impact of Corrections on Re-offending: A Review of What Works.*” *Third edition*. London UK: Research, Development, and Statistics Directorate Home Office.
- Howard, G. (1999). *The disciplined mind*. New York: Simon & Schuster
- Humphrey, J. H., Yow, D. A., & Bowden, W. W. (2000). *Stress in College Athletes: Causes, Consequences, Coping*. Binghamton, NY: The Haworth Half-Court Press. An imprint of the Haworth Press, Inc.
- Hussen, K., & Aemero, A. (2016). *Prisoners criminal thinking & perception of quality of life in prison as correlated with depression: International Journal of development research vol.6, issue, 03, pp.7257-7266*.
- James, D. J., & Glaze, E. (2006). *Mental health problems of prison and jail inmates*. <http://bjs.ojp/usdoj.gov/content/pub/pdf/mhppji.pdf>
- Jasser, S.S., & Langrock, A.M. G. (2005). Coping with the stress of parental Depression II: Adolescent and parent reports of coping and adjustment. *Journal of clinical child and adolescent psychology*, 34, 193-205.
- John, M, Hillary K, Beatrice, M, & Veronica, K. (2015), *Effects of Imprisonment on Depression among Female Inmates in Selected Prisons in Kenya*. *Research on Humanities and Social Sciences Vol.5, No. 16*.
- Jordan, M. 2012. *Patients'/prisoners' perspectives regarding the National Health Service mental healthcare provided in one Her Majesty's prison service establishment. The Journal of Forensic Psychiatry and Psychology*, 23(5-6): 722-739.
- Joycelyn, M.P. (2005), *the Philosophy and History of Prisons*. Texas State University–San Marcos

- Judith L, Charles H, & Peter J (2020). *Prevalence and Associated Factors of Mental Disorders among Prisoners in Kenya. International Journal of Health Sciences and Research (www.ijhsr.org) 261 Vol.10; Issue: 7.*
- Kendler, K.S., Gardner, C.O., and Prescott, C.A. (2006). Toward a comprehensive developmental model for major depression in men. *American Journal of Psychiatry, 163*, 115–124.
- Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1998). *Stressful life events and major depression: risk period, long-term contextual threat, and diagnostic specificity. The Journal of nervous and mental disease, 186(11)*, 661–669. <https://doi.org/10.1097/00005053-199811000-00001>.
- Kessler, R. C. et al. (2009). *The global burden of mental disorders: an update from the WHO World Mental Health (WMH) surveys. Epidemiological e Psychiatric Social*, vol. 18, no. 1, pp. 23–33.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., Rush, A. J., Walters, E. E., & Wang, P. S., *National Comorbidity Survey Replication (2003). The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). JAMA, 289(23)*, 3095–3105. <https://doi.org/10.1001/jama.289.23.3095>
- Kessler, R., and Magee, W. (1993). *Childhood adversities and adult depression: Basic patterns of association in a US national survey. Psychological Medicine, 23*, 679–690.
- Kessler, R.C. (1997). *The effects of stressful life events on depression. Annual Review of Psychology, 48*, 191–21
- Kessler, R.C., Davis, C.G., and Kendler, K.S. (1997). *Childhood adversity and adult psychiatric disorder in the U.S. National Comorbidity Survey. Psychological Medicine, 27*, 1101–1119.4.
- Lafortune, D. (2010). *Prevalence and screening of mental disorders in short-term correctional facilities. International Journal of Law and Psychiatry, 33(2)*, 94-100
- Lau, J.Y.F., Rijdsdijk, F., and Eley, T.C. (2006). I think, therefore I am: A twin study of attributional style in adolescents. *Journal of Child Psychology and Psychiatry, 47*, 696–703.

- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lovibond, S. H., & Lovibond, P. F. (1995a). *Manual for the Depression Anxiety Stress Scales (2nd ed.)*. Sydney, Australia: Psychology Foundation of Australia. As retrieved from <https://trove.nla.gov.au/work/30421447> on Nov, 17/2018
- Lovibond, S. H., & Lovibond, P. F. (1995b). *The structure of negative emotional states: Comparison of the Depression, Anxiety Stress Scales (DASS) with the Beck depression and anxiety inventory*. *Behav Res Therapy*. 33: 335-343. As retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/7726811> on Nov, 17/2018
- Mackenzie, D. and Goodstein, L. 1985. *Long-term incarceration impacts and characteristics of Long-term offenders*. *Criminal Justice and Behavior*, 12,395-414.
- Majumdar MS, Acharya A. *Mental health problem among prison population, Udaipur, Tripur an Indian J Appl Res*. 2016; 6(4).
- Martin, R.A., Kazarian, S.S., & Breiter, H.J. (1995). *Perceived Stress, life events, Dysfunctional attitude & Depression In adolescent psychiatric inpatients*. *Journal of Psychopathology and behavioral assessment*, 17, 81-95.
- Mathews, A., and MacLeod, C. (2005). *Cognitive vulnerability to emotional disorders*. *Annual Review of Clinical Psychology*, 1, 167–195.
- Mazure, C.M. (1998). *Life stressors as risk factors in depression*. *Clinical Psychology: Science and Practice*, 5, 291–313.
- McGuffin, P., Rijdsdijk, F., Andrew, M., Sham, P., Katz, R., and Cardno, A. (2003). The heritability of bipolar affective disorder and the genetic relationship to unipolar depression. *Archives of General Psychiatry*, 60, 497–502
- McNamara, S. (2000). *Stress in Young People: What's New and What Can We Do?* New York: Continuum multidimensional test of the effect of prison education programs on offenders' behavior.
- Mukiza, F. (2014). *Physical activity and prisoner's health: a qualitative systematic review*, (Master's Thesis).
- Naidoo, S., & Mkize, D. L. (2012). *Prevalence of mental disorders in a prison population in Durban, South Africa*. *African journal of psychiatry*, 15(1), 30–35. <https://doi.org/10.4314/ajpsy.v15i1.4>

- Nancy M. Petry, PhD, A Comparison of Young, Middle-Aged, and Older Adult Treatment-Seeking Pathological Gamblers, *The Gerontologist*, Volume 42, Issue 1, 1 February 2002, Pages 92–99, <https://doi.org/10.1093/geront/42.1.92>
- Necho, M., Belete, A., Tsehay, M. *et al.* A meta-analysis of depressive symptoms among Ethiopian prisoners and a narrative description of its associated factors: a country based systematic review and meta-analysis study. *BMC Psychiatry* **20**, 281 (2020). <https://doi.org/10.1186/s12888-020-02662-5>
- Nwolise, O.B.C (2010). *Bridging the funding gap in corrections: The urgent need for increased financial vitamins in African correction services*. Paper presented at the Biennial Conference of the African Correctional Association, held in Accra, Ghana, September 13-17, 2010.
- Osasona, S. O., & Koleoso, O. N. (2015). *Prevalence and correlates of depression and anxiety disorder in a sample of inmates in a Nigerian prison*. *The International Journal of Psychiatry in Medicine*, 50(2), 203–218.
- Quyen.D. (2007). *Depression and stress among the first year medical students in university of medicine and pharmacy*. MPH thesis presented to Chulalongkorn University
- Oxford Dictionary. London: Oxford University Press; 2015. Retrieved from: <http://www.oxforddictionaries.com/> Accessed Dec 1, 2018.
- Rao, U., Hammen, C., and Daley, S.E. (1999). *Continuity of depression during the transition to adulthood: A 5-year longitudinal study of young women*. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 908–915.
- Reid S, William S, & Daniel A.D. (2016), *A Review of Correctional Philosophies toward Reaffirming Rehabilitation as an Ohio Correctional Paradigm*, *International Journal of Business and Social Science*
- Reta Y, Getachew R, Bahiru M, Kale B, Workie K. (2019). *Depressive disorder and its associated factors among prisoners in Debre Berhan town, north Showa, Ethiopia*. *BioRxiv*. <https://doi.org/10.1101/703223>.
- Reta,y.,Getachew,R.,Meles,B.,Betelhem,K.,Workie,K.,&Gebereegziabehere,Y.(2020).*Depressive symptoms and its associated factors among prisoners in Deberibirhan prison , Ethiopia*.

- Samuel, O.O & Olaide, N.K. (2015), *Prevalence and correlates of depression and anxiety disorder in a sample of inmates in a Nigerian prison*. *The International Journal of Psychiatry in Medicine*
- Schnittker, J., & John, A. (2007). *Enduring Stigma: The Long-Term Effects of Incarceration on Health*. *Journal of Health and Social Behavior*, 48(2), 115–30. <https://doi.org/10.1177/002214650704800202>.
- Selye, H. (1993). History of the Stress Concept. In L. Goldberger, & S. Breznitz (Eds.), *the Handbook of Stress* (2nd Edition). New York: The Free Press.
- Shambal, Z. (2007). Disposition of prisoners in Ethiopia: A case study in Raya (Unpublished master's thesis). Addis Ababa University, Addis Ababa, Ethiopia.
- Shivani, T. (2013), *the psychological effects of incarceration on inmates*. *Delhi psychiatry journal* vol.16 No 1.
- Strimple, E. O. (2003). A history of prison inmate-animal interaction programs. *American Behavioral Scientist*, 43(1), 70-78.
- Sullivan, P.F., Neale, M.C., and Kendler, K.S. (2000). Genetic epidemiology of major depression: Review and meta-analysis. *American Journal of Psychiatry*, 157, 1552–1562.
- Sullivan, P.F., Kendler, K.S., and Neale, M.C. (2003). Schizophrenia as a complex trait: Evidence from a meta-analysis of twin studies. *Archives General Psychiatry*, 60, 1187–1192.
- Tadesse, T. (2011). *Freedom from torture, inhuman or degrading treatment or punishment: The case of some selected prisons of Oromia National Regional State*. Unpublished MA thesis, Addis Ababa University
- Teresa, K. B, Abel, F. D, Berihun, A.D, Nigussie, Y. M, & Telake, A.B. (2017). *More than eight in every nineteen inmates were living with depression at prisons of Northwest Amhara Regional State, Ethiopia*. *BMC psychiatry*.
- Vasey, M. W., & MacLeod, C. (2001). Information-processing factors in childhood anxiety: A review and developmental perspective. In M.W.Vasey & M.R.Dadds (Eds.), *the developmental psychopathology of anxiety* (pp. 253–277). London, United Kingdom: Oxford University Press

- Vasey, M.W., Dalgleish, T., & Silverman, W.K. (2003). *Research on information processing factors in child and adolescent psychopathology: A critical commentary*. *Journal of Clinical Child and Adolescent Psychology*, 32, 81–93
- Whisman, M.A. (2001). *The association between depression and marital dissatisfaction*. In S.R.H. Beach (Ed.), *Marital and Family Processes in Depression: A Scientific Foundation for Clinical Practice* (pp. 3–24).
- Whisman, M.A., Uebelacker, L.A., and Weinstock, L.M. (2004). *Psychopathology and marital satisfaction: The importance of evaluating both partners*. *Journal of Consulting and Clinical Psychology*, 72, 830–838.
- Wilson, C. C., & Turner, D. C. (1998). *Companion animals in human health*. Thousand Oaks: Sage Publications.
- Worku, A., Geberemariam, E., & Belete, T. (2014, March 21-23). *ANRS Correctional institutions from where to where?* Paper presented for panel discussion in Festival for Security Institutions in ANRS, organized by ANRS Correctional Centres Commission.
- World Health Organization, WHO. 2007. *Health in prisons: A WHO guide to the essentials in prison health*. Copenhagen: Organization Regional Office for Europe. Accessed: 2017 April 21. Available from: [www.euro.who.int/\\_\\_data/assets/pdf\\_file/009/99018/E90174.pdf](http://www.euro.who.int/__data/assets/pdf_file/009/99018/E90174.pdf).
- World Health Organization, *World suicide prevention day 2012*.  
[http://www.who.int/mediacentre/events/annual/world suicide prevention day/en/](http://www.who.int/mediacentre/events/annual/world%20suicide%20prevention%20day/en/)  
Accessed 16.6.2012
- World Health Organization. (2001). *The World health report: 2001: Mental health: new understanding, new hope*. World Health organization. <https://apps.who.int/iris/handle/10665/42390>
- Zakir A., Teshome Kabeta., Lamessa Dube., Workinesh Tessema., & Mubarek Abera. (2018). *Prevalence and associated factors of depression among prisoners in Jimma Town Prison, South West Ethiopia*. *Psychiatry Journal*.  
<https://doi.org/10.1155/2018/5762608>.
- Zamble, E. 1992. *Adaptation to imprisonment: Behavior and adaptation in Long-Term Prison Inmates*.

Zlotnick, C., Kohn, R., Keitner, G., and Della Grotta, S.A. (2000). *The relationship between quality of interpersonal relationships and major depressive disorder: Findings from the National Comorbidity Survey*. *Journal of Affective Disorders*, 59, 205–215.

**Appendix A**  
**Questionnaires in English**  
**ADDIS ABABA UNIIVERSITY**  
**COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES**  
**SCHOOL OF PSYCHOLOGY**  
**Questionnaires for Inmates**

**Research Title: - Assessment of Depression, Anxiety and Stress in Kality High Security Correction Center, Addis Ababa.**

**Dear respondents,**

This study is being conducted for the partial fulfillment of the requirement for master's degree in counseling psychology from Addis Ababa University. This questionnaire is prepared to assess the prevalence of depression, anxiety and stress on convicted offenders in Kality Correctional Center. The purpose of this questionnaire is to obtain data regarding perception and feeling about the prevalence of depression, anxiety and stress in Kality Correctional Center. The study will provide recommendations based on its finding after the data is collected in this manner. The questionnaire will be filled based on the interest of respondents. You are not required to indicate your identity.

**Please respond to all questions and do not write your name.**

Phone number: 0910539767: Email: tarekegnmulu1@gmai

I will like to thank you in advance for your cooperation.

Are you volunteer to participate? 1. Yes 2. No

**Section1: Socio- Demographic Information**

**Instruction:** The following questions are prepared to get general information. Please indicate your answer by circling the number.

**Section One:**

1. What is your age?
  - 1.1. 18-35 years old
  - 1.2. 36-55 years old
  - 1.3. Above 56 years old
2. What is your marital status?
  - 2.1. Married
  - 2.2. Single
  - 2.3. Divorced
  - 2.4. Widowed
  - 2.5. Others

3. Have you children?

3.1. Yes

3.2. No

4. If you have children, how many children do you have?

4.1. One child

4.2. Two children

4.3 Three children

4.4. Four children

4.5. Above five

5. Age of the child/children:

5.1. From 0-1 year

5.2. From 1-3 years

5.3. From 3-6 years

5.4. From 6-12 years

5.5. From 12-18 years

6. Religion

6.1. Orthodox

6.2. Muslim

6.3. Catholic

6.4. Protestant

6.5. Others

7. Educational status

7.1. Illiterate

7.2. Can read and write

7.3. Elementary school completed

7.4. Secondary school completed

7.5. Collage and higher education

**Section 2: Information's Related with the situations of prisoners in correction center**

1. Have you detained before?

1.1. Yes

1.2. No

2. The type of crime that makes you to be convicted currently in the correction center?

2.1. Killings or Murder

2.2. Theft

2.3. Drug trafficking

2.4. Corruption

2.5. Sexual abuse

2.6. Others

**3. How many periods of time/year you have punished?**

3.1. From six month to 3 years

3.2. From 3 years to 5 years

3.3. From 6 years to 10 years

3.4. Above 10 years

3.5. Life time imprisonment

3.6. Life time imprisonment

**4. The period of stay in the correction center?**

4.1. From 6 months to 2 years

4.2. From 3 years to 5 years

4.3. From 6 years to 10 years

4.4. Above 10 years

**Section 3: Information’s Related with Psychological Conditions of Prisoners’ in Correction Center**

**The English Version of Depression, Anxiety and Stress Scale (DASS-21)**

**Instruction:** There are 21 groupings of statements in this scale. Please read each group carefully and select one statement from each group that best expresses how you have felt throughout the previous week, including today. Make a circle around the number you've chosen. If multiple assertions in the group appear to apply equally well, circle the group with the highest number. Make sure that no single group has more than one statement. Please read each statement and circle a number indicating how much the statement applies to you in the previous week (0, 1, 2, or 3). There are no correct or incorrect replies. Spend as little time as possible on each assertion. The rating scale is as follows:

**0:** Did not apply to me at all or **NEVER**

**1:** Applied to me to some degree, or some of the time or **SOMETIMES**

**2:** Applied to me to a considerable degree, or a good part of time or **OFTEN**

**3:** Applied to me very much, or most of the time or **ALMOST ALWAYS**

	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
1. I found it hard to wind down	0	1	2	3
2. I was aware of dryness of my mouth	0	1	2	3
3. I couldn't seem to experience any positive feeling at all	0	1	2	3
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5. I found it difficult to work up the initiative to do things	0	1	2	3
6. I tended to over- react to situations	0	1	2	3
7. I experienced trembling (e.g., in the hands)	0	1	2	3
8. I felt that I was using a lot of nervous energy	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10. I felt that I had nothing to look forward to	0	1	2	3
11. I found myself getting agitated	0	1	2	3
12. I found it difficult to relax	0	1	2	3
13. I felt down-hearted and blue	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15. I felt I was close to panic	0	1	2	3
16. I was unable to become enthusiastic about anything	0	1	2	3
17. I felt I wasn't worth much as a person	0	1	2	3
18. I felt that I was rather touchy	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
20. I felt scared without any good reason	0	1	2	3
21. I felt that life was meaningless	0	1	2	3

Appendix B

Questionnaires-Amharic version

አዲስ አበባ ዩኒቨርሲቲ

የሰነ-ትምህርትና ባህሪ ጥናት ኮሌጅ

የሳይኮሎጂ ት/ቤት

መግቢያ: የዚህ መጠይቅ ዋና አላማ በአዲስ አበባ ቃሊቲ ከፍተኛ ጥበቃ ማረጋገጫ ቤት የፍርድ ጊዜያቸውን በመከታተል ላይ የሚገኙ የህግ ታራሚዎች ላይ የ ድብርት ወይም ድባቤ፣ የጭንቀትና ውጥረት ችግሮች ሁኔታ ለመዳሰስ ነው። ውድ የዚህ ጥናት ተሳታፊዎች ይህ ጥናት ውጤታማ እንዲሆን የእርስዎ እውነተኛ ምላሽ ከፍተኛ አስተዋፅኦ አለው። ውድ የዚህ ጥናት ተሳታፊዎች ይህንን መጠይቅ በሚሞሉበት ጊዜ ስምዎትን መፃፍ አይጠበቅብዎትም። ጥናቱ ለትምህርታዊ አላማ ብቻ የሚካሄድ በመሆኑ የእርስዎ ሚስጥር የተጠበቀ ነው።ጥናቱ በዚህ መንገድ የተሰበሰቡ መረጃዎችን መሰረት በማድረግ የመፍትሄ አቅጣጫዎችን ያስቀምጣል።

ውድ ጊዜዎትን ሰጥተው መረጃውን ለመሙላት ስለተባበሩኝ ከልብ አመሰግናለሁ!

ክፍል 1:አጠቃላይመረጃዎች:እባክዎ ለሚከተሉት ጥያቄዎች እርስዎ ትክክል ነው የሚሉትን በማክብብ ይመልሱ

1. እድሜ: 1.1. ከ 18-24 አመት 1. 2. ከ 25-34 አመት 1. 3. ከ35-44 አመት 1. 4. ከ 45- 54 አመት 1.5. ከ55 አመትበላይ

2. የጋብቻ ሁኔታ: 2.1. ያገባ 2.2. ያላገባ 2.3. አግብቶየፈታ 2.4. አግብቶ የሞተበት 2.5.ሌላ

3. ልጆች አሉህ? 3.1. አዎ 3.2. የለኝም

4. ልጆች ካሉህ ስንትናቸው? 4.1. አንድ ልጅ 4.2. ሁለት ልጆች 4.3. ሶስት ልጆች 4.4.አራት ልጆች 4.5. አምስትና ከዚያ በላይ

5. የልጆችህ እድሜ: 5.1.ከ 0- 1 አመት 5.2.ከ 1 -3 አመት 5.3. ከ 3-6 አመት 5. 4. ከ 6-12 አመት 5.5. ከ12-18 አመት

6. ሃይማኖት: 6.1. አርቶዶክስ 6.2.ሙስሊም 6.3.ካቶሊክ 6.4. ፕሮቴስታንት 6.5. ሌሎች

7. የትምህርት ሁኔታ: 7.1. ያልተማረ 7.2. ማንበብና መጻፍ የሚችል 7.3. አንደኛ ደረጃ ያጠናቀቀ 7.4. ሁለተኛ ደረጃ ያጠናቀቀ 7.5. ኮሌጅና ከዚያ በላይ

ክፍል 2:ከታራሚዎች የማረጋገጫ ቤት ሁኔታ ጋር የተያያዙ ጥያቄዎች:

- 1. ከዚህ በፊት ታስረህ ታውቃለህ? 1.1. አዎ 1.2. አላውቅም
- 2. አሁን ማረጋገጫ ቤት የገባህበት የወንጀል አይነት: 2.1. ግድያ/ ነፍስማጥፋት 2.2. ስርቆት 2.3. እፅዋዘዋወር 2.4. ሙስና 2.5. ጾታዊጥቃትማድረስ 2.6.ሌሎች

- 3. ተፈርዶ-በሃል ? 3.1. አዎ 3.2. አልተፈረደ-በኝም
- 4. የተፈረደ-በህ ከሆነ ስንት አመት ተፈረደ-በህ? 4.1. ከ6 ወር - 2 አመት 4.2. ከ3-5 አመት 3. ከ 6 - 10 አመት  
4. ከ 10 አመት በላይ. 4.5 እድሜል ከእስራት
- 5. በማረመሪያቤቱ የቆየህበት ጊዜ: 5.1. ከ 6 ወር - 2 አመት 5.2. ከ3 - 5 አመት 3. ከ6- 10 አመት 4. ከ 10 አመት በላይ

**ክፍል 3: የታራሚዎች ስነልቦናዊ ጤንነት የሚመለከቱ መረጃዎች፡** ከዚህ በታች የተዘረዘሩትን እያንዳንዱ ጥያቄዎች ካነበቡ በኋላ በእርስዎ ላይ ባለፈው አንድ ሳምንት ውስጥ የእርስዎን ስነልቦናዊ ሁኔታ በይበልጥ ይገልጻል የሚሉትን ከተዘረዘሩት አራት አማራጮች አንዱን በማክበብ ይመልሱ፡፡

- 1. መጨነቅ በማቆም ዘና ለማለት ይከብደኝ ነበር
  - 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ (አልፎአልፎ)
  - 2). ብዙ ጊዜ ( በተደጋጋሚ) 3). እጅግ ብዙ ጊዜ (ሁልጊዜ)
- 2. አፈ ሲድርቅ ይታወቀ ኝነበር
  - 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ (አልፎአልፎ)
  - 2). ብዙ ጊዜ ( በተደጋጋሚ) 3). እጅግ ብዙ ጊዜ (ሁልጊዜ)
- 3. ምንም ዓይነት ጥሩ ስሜት እየተሰማኝ አልነበረም
  - 0). ፍጽሞ የእኔን ሁኔታ አይገልፅም ( አልቀበለውም) 1). አንዳንድ ጊዜ ( አልፎአልፎ)
  - 2). ብዙ ጊዜ ( በተደጋጋሚ) 3). እጅግ ብዙ ጊዜ (ሁልጊዜ)
- 4. ለመትንፈስ እቸገር ነበር ( ለምሳሌ- ከልክ ያለፈ ቶሎ ቶሎ መተንፈስ፣ ያለ ምንም አካላዊ እንቅስቃሴ ትንፋሽ ማጣት)
  - 0). ፈጽሞ የእኔን ሁኔታ አይገልፅም ( አልቀበለውም) 1). አንዳንድ ጊዜ ( አልፎአልፎ)
  - 2). ብዙ ጊዜ ( በተደጋጋሚ) 3). እጅግ ብዙ ጊዜ (ሁልጊዜ)
- 5. ማንኛውንም ነገር ለማከናወን ተነሳሽነት አጣለሁ
  - 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ (አልፎአልፎ)
  - 2). ብዙ ጊዜ ( በተደጋጋሚ) 3). እጅግ ብዙ ጊዜ (ሁልጊዜ)
- 6. አንዳንድ ነገሮች ከተገቢው በላይ አጋንናለሁ
  - 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ (አልፎ አልፎ)
  - 2). ብዙ ጊዜ ( በተደጋጋሚ) 3). እጅግ ብዙ ጊዜ (ሁልጊዜ)
- 7. መንቀጥቀጥ አጋጥሞኛል
  - 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ (አልፎአልፎ)

- 2). ብዙ ጊዜ( በተደጋጋሚ)                    3). አጅግ ብዙ ጊዜ(ሁልጊዜ)
- 8.ብዙ የነርቭ( ስሜታዊ ጉልብት) እንደተጠቀምኩ ይሰማኛል
- 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም(አልቀበለውም)                    1). አንዳንድ ጊዜ(አልፎ አልፎ)
- 2). ብዙጊዜ( በተደጋጋሚ)                    3). አጅግ-ብዙጊዜ(ሁልጊዜ)
- 9.አንዳንድአጋጣሚዎችላይተጨንቄእራሴንእንዳላዋርድአሰጋነበር
- 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም)                    1). አንዳንድ ጊዜ(አልፎ አልፎ)
- 2). ብዙ ጊዜ( በተደጋጋሚ)                    3). አጅግ ብዙ ጊዜ(ሁልጊዜ)
10. ምንም ወደፊት የሚያጓጓ ነገር እንደሌለኝ ይሰማኛል
- 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም(አልቀበለውም)                    1). አንዳንድ ጊዜ(አልፎአልፎ)
- 2). ብዙጊዜ (በተደጋጋሚ)                    3). አጅግ ብዙጊዜ(ሁልጊዜ)
11. የመንፈስ መረበሽ ውስጥ እራሴን አገኘዋለሁ
- 0). ፈፅሞየእኔንሁኔታአይገልፅም (አልቀበለውም)                    1). አንዳንድጊዜ(አልፎአልፎ)
- 2). ብዙ ጊዜ ( በተደጋጋሚ)                    3). አጅግ-ብዙጊዜ(ሁልጊዜ)
12. የመዝናናት መንፈስ ውስጥ መግባትይከብደኛል
- 0). ፈፅ ሞየእኔን ሁኔታ አይገልፅም(አልቀበለውም)                    1). አንዳንድ ጊዜ(አልፎ አልፎ)
- 2). ብዙ ጊዜ( በተደጋጋሚ)                    3). እጅግ በጣም ብዙጊዜ(ሁልጊዜ)
13. የሃዘን ስሜት ይሰማኝ ነበር
- 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም)                    1). አንዳንድ ጊዜ(አልፎ አልፎ)
- 2). ብዙ ጊዜ( በተደጋጋሚ)                    3). አጅግ በጣም ብዙጊዜ(ሁልጊዜ)
14. ከማንኛውም እያደረኩት ከነበረው ነገር የሚያስቆመኝ ነገር መታገስ አልቻልኩም
- 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም)                    1). አንዳንድጊዜ(አልፎ አልፎ)
- 2). ብዙ ጊዜ( በተደጋጋሚ)                    3). አጅግ ብዙ ጊዜ(ሁልጊዜ)
15. ልረበሽ ትንሽ የቀረኝ እንደሆነ ይሰማኛል
- 0). ፈፅሞ የእኔን ሁኔታ አይገልፅም(አልቀበለውም)                    1). አንዳንድ ጊዜ(አልፎ አልፎ)
- 2). ብዙ ጊዜ( በተደጋጋሚ)                    3). እጅግ ብዙ ጊዜ(ሁልጊዜ)
16. ማንኛውምነገርበጥሩስሜትማየትአቅቶኝነበር

0). ፈፀሞ የእኔን ሁኔታ አይገልፅም(አልቀበለውም) 1). አንዳንድ ጊዜ(አልፎ አልፎ)

2). ብዙጊዜ( በተደጋጋሚ) 3). አጅግ ብዙ ጊዜ(ሁልጊዜ)

17. እንደ ሰው ምንም የማልረባ መስሎ ይሰማኝ ነበር

0). ፈፀሞ የእኔን ሁኔታ አይገልፅም(አልቀበለውም) 1). አንዳንድጊዜ(አልፎአልፎ)

2). ብዙ ጊዜ( በተደጋጋሚ) 3). አጅግ ብዙ ጊዜ(ሁልጊዜ)

18. ትንሽ የሚበቃው እንደሆንኩ ይሰማኛል

0). ፈፀሞ የእኔን ሁኔታ አይገልፅም(አልቀበለውም) 1). አንዳንድ ጊዜ(አልፎ አልፎ)

2). ብዙ ጊዜ( በተደጋጋሚ) 3). አጅግ ብዙ ጊዜ(ሁልጊዜ)

19. የአካል እንቅስቃሴ በሌለበት የልቤን ድርጊት አስተውል ነበር (ለምሳሌ- የልብ ምት መጠን መጨመር፣ የልብ ምት መዝለል)

0). ፈፀሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ(አልፎ አልፎ)

2). ብዙ ጊዜ( በተደጋጋሚ) 3). አጅግ ብዙ ጊዜ(ሁልጊዜ)

20. ያለ ምንም ምክንያት ፍርሃት ይሰማኛል

0). ፈፀሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ(አልፎ አልፎ)

2). ብዙ ጊዜ( በተደጋጋሚ) 3). አጅግ ብዙ ጊዜ(ሁልጊዜ)

21. ህይወት ትርጉም እንደሌለው ይሰማኛል

0). ፈፀሞ የእኔን ሁኔታ አይገልፅም (አልቀበለውም) 1). አንዳንድ ጊዜ(አልፎ አልፎ)

2).ብዙ ጊዜ (በተደጋጋሚ) 3). አጅግ ብዙ ጊዜ(ሁልጊዜ)

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**Appendix (C) Post hoc comparison-Depression Score Difference Based on Marital Status**


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		<b>LSD Post hoc Comparison</b>			95% Confidence	
(I) marital status	(J) marital status	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Married	Single	-.60423*	.08801	.000	-.7776	-.4309
	Divorced	-1.04471*	.23260	.000	-1.5029	-.5865
	Widowed	-1.00899*	.26680	.000	-1.5346	-.4834
	Others	-1.04471*	.32456	.001	-1.6841	-.4054
Single	Married	.60423*	.08801	.000	.4309	.7776
	Divorced	-.44048	.23689	.064	-.9071	.0262
	Widowed	-.40476	.27055	.136	-.9377	.1282
	Others	-.44048	.32765	.180	-1.0859	.2050
Divorced	Married	1.04471*	.23260	.000	.5865	1.5029
	Single	.44048	.23689	.064	-.0262	.9071
	Widowed	.03571	.34576	.918	-.6454	.7168
	Others	.00000	.39206	1.000	-.7723	.7723
Widowed	Married	1.00899*	.26680	.000	.4834	1.5346
	Single	.40476	.27055	.136	-.1282	.9377
	Divorced	-.03571	.34576	.918	-.7168	.6454
	Others	-.03571	.41327	.931	-.8498	.7784
Others	Married	1.04471*	.32456	.001	.4054	1.6841
	Single	.44048	.32765	.180	-.2050	1.0859
	Divorced	.00000	.39206	1.000	-.7723	.7723
	Widowed	.03571	.41327	.931	-.7784	.8498

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\*. The mean difference is significant at 0.05 level.

**Appendix (D) Post hoc comparison-Anxiety Score Difference Based on Marital Status**

<b>LSD Post hoc Comparison</b>						
(I) marital status	(J) marital status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Married	Single	-.88013*	.09192	.000	-1.0612	-.6991
	Divorced	-1.37163*	.24294	.000	-1.8502	-.8931
	Widowed	-1.32401*	.27866	.000	-1.8729	-.7751
	Others	-1.37163*	.33898	.000	-2.0394	-.7039
Single	Married	.88013*	.09192	.000	.6991	1.0612
	Divorced	-.49150*	.24742	.048	-.9789	-.0041
	Widowed	-.44388	.28257	.118	-1.0005	.1128
	Others	-.49150	.34221	.152	-1.1656	.1826
Divorced	Married	1.37163*	.24294	.000	.8931	1.8502
	Single	.49150*	.24742	.048	.0041	.9789
	Widowed	.04762	.36113	.895	-.6638	.7590
	Others	.00000	.40948	1.000	-.8066	.8066
Widowed	Married	1.32401*	.27866	.000	.7751	1.8729
	Single	.44388	.28257	.118	-.1128	1.0005
	Divorced	-.04762	.36113	.895	-.7590	.6638
	Others	-.04762	.43163	.912	-.8979	.8027
Others	Married	1.37163*	.33898	.000	.7039	2.0394
	Single	.49150	.34221	.152	-.1826	1.1656
	Divorced	.00000	.40948	1.000	-.8066	.8066
	Widowed	.04762	.43163	.912	-.8027	.8979

\*. The mean difference is significant at 0.05 level.

**Appendix (E) Post hoc Comparison-Stress Score Difference Based on Marital Status**

<b>LSD Post hoc Comparison</b>						
(I) marital status	(J) marital status	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Married	Single	-.81668*	.08557	.000	-.9852	-.6481
	Divorced	-1.27785*	.22614	.000	-1.7233	-.8324
	Widowed	-1.20047*	.25938	.000	-1.7114	-.6895
	Others	-1.22428*	.31554	.000	-1.8459	-.6027
Single	Married	.81668*	.08557	.000	.6481	.9852
	Divorced	-.46117*	.23031	.046	-.9148	-.0075
	Widowed	-.38379	.26303	.146	-.9019	.1344
	Others	-.40760	.31854	.202	-1.0351	.2199
Divorced	Married	1.27785*	.22614	.000	.8324	1.7233
	Single	.46117*	.23031	.046	.0075	.9148
	Widowed	.07738	.33615	.818	-.5848	.7396
	Others	.05357	.38116	.888	-.6973	.8044
Widowed	Married	1.20047*	.25938	.000	.6895	1.7114
	Single	.38379	.26303	.146	-.1344	.9019
	Divorced	-.07738	.33615	.818	-.7396	.5848
	Others	-.02381	.40178	.953	-.8153	.7677
Others	Married	1.22428*	.31554	.000	.6027	1.8459
	Single	.40760	.31854	.202	-.2199	1.0351
	Divorced	-.05357	.38116	.888	-.8044	.6973
	Widowed	.02381	.40178	.953	-.7677	.8153

\*. The mean difference is significant at 0.05 level.

**Appendix (F) Post hoc Comparison-Depression Score Difference Based on Religious Status**

		LSD Post hoc Comparison			95% Confidence	
(I) religion of the respondent	(J) religion of the respondent	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Orthodox	Muslim	-.64177*	.11142	.000	-.8612	-.4223
	Catholic	-.66300*	.25349	.009	-1.1623	-.1637
	Protestant	-.94689*	.10908	.000	-1.1618	-.7320
	Others	-1.06096*	.23541	.000	-1.5247	-.5972
Muslim	Orthodox	.64177*	.11142	.000	.4223	.8612
	Catholic	-.02124	.26816	.937	-.5495	.5070
	Protestant	-.30512*	.13983	.030	-.5806	-.0297
	Others	-.41919	.25114	.096	-.9139	.0755
Catholic	Orthodox	.66300*	.25349	.009	.1637	1.1623
	Muslim	.02124	.26816	.937	-.5070	.5495
	Protestant	-.28388	.26720	.289	-.8102	.2425
	Others	-.39796	.33899	.242	-1.0657	.2698
Protestant	Orthodox	.94689*	.10908	.000	.7320	1.1618
	Muslim	.30512*	.13983	.030	.0297	.5806
	Catholic	.28388	.26720	.289	-.2425	.8102
	Others	-.11408	.25011	.649	-.6068	.3786
Others	Orthodox	1.06096*	.23541	.000	.5972	1.5247
	Muslim	.41919	.25114	.096	-.0755	.9139
	Catholic	.39796	.33899	.242	-.2698	1.0657
	Protestant	.11408	.25011	.649	-.3786	.6068

\*. The mean difference is significant at 0.05 level.

**Appendix (G) Post hoc Comparison-Anxiety Score Difference Based on Religious Status****LSD Post hoc Comparison**

(I) religion of the respondent	(J) religion of the respondent	Mean		Sig.	95% Confidence Interval	
		Difference (I-J)	Std. Error		Lower Bound	Upper Bound
Orthodox	Muslim	-.96953*	.11633	.000	-1.1987	-.7404
	Catholic	-1.20055*	.26468	.000	-1.7219	-.6792
	Protestant	-1.14744*	.11390	.000	-1.3718	-.9231
	Others	-1.34681*	.24580	.000	-1.8310	-.8626
Muslim	Orthodox	.96953*	.11633	.000	.7404	1.1987
	Catholic	-.23102	.28000	.410	-.7826	.3205
	Protestant	-.17790	.14601	.224	-.4655	.1097
	Others	-.37728	.26222	.152	-.8938	.1393
Catholic	Orthodox	1.20055*	.26468	.000	.6792	1.7219
	Muslim	.23102	.28000	.410	-.3205	.7826
	Protestant	.05311	.27899	.849	-.4965	.6027
	Others	-.14626	.35395	.680	-.8435	.5510
Protestant	Orthodox	1.14744*	.11390	.000	.9231	1.3718
	Muslim	.17790	.14601	.224	-.1097	.4655
	Catholic	-.05311	.27899	.849	-.6027	.4965
	Others	-.19937	.26115	.446	-.7138	.3151
Others	Orthodox	1.34681*	.24580	.000	.8626	1.8310
	Muslim	.37728	.26222	.152	-.1393	.8938
	Catholic	.14626	.35395	.680	-.5510	.8435
	Protestant	.19937	.26115	.446	-.3151	.7138

\*. The mean difference is significant at 0.05 level.

**Appendix (H) Post hoc Comparison-Stress Score Difference Based on Religious Status**

		<b>LSD Post hoc Comparison</b>			95% Confidence Interval	
(I) religion of the respondent	(J) religion of the respondent	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Orthodox	Muslim	-.89636*	.10941	.000	-1.1119	-.6808
	Catholic	-.97680*	.24892	.000	-1.4671	-.4865
	Protestant	-1.05189*	.10712	.000	-1.2629	-.8409
	Others	-1.22510*	.23116	.000	-1.6805	-.7697
Muslim	Orthodox	.89636*	.10941	.000	.6808	1.1119
	Catholic	-.08044	.26332	.760	-.5992	.4383
	Protestant	-.15553	.13731	.258	-.4260	.1150
	Others	-.32874	.24661	.184	-.8145	.1571
Catholic	Orthodox	.97680*	.24892	.000	.4865	1.4671
	Muslim	.08044	.26332	.760	-.4383	.5992
	protestant	-.07509	.26238	.775	-.5920	.4418
	Others	-.24830	.33287	.456	-.9040	.4074
Protestant	Orthodox	1.05189*	.10712	.000	.8409	1.2629
	Muslim	.15553	.13731	.258	-.1150	.4260
	Catholic	.07509	.26238	.775	-.4418	.5920
	Others	-.17321	.24560	.481	-.6570	.3106
Others	Orthodox	1.22510*	.23116	.000	.7697	1.6805
	Muslim	.32874	.24661	.184	-.1571	.8145
	Catholic	.24830	.33287	.456	-.4074	.9040
	Protestant	.17321	.24560	.481	-.3106	.6570

\*. The mean difference is significant at 0.05 level.

**Appendix (I) Post hoc Comparison-Depression Score Difference Based on Educational Status**

**LSD Post hoc Comparison**

					95% Confidence Interval	
(I) educational status of the respondent	(J) educational status of the respondent	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Illiterate	Read and write	-.27452	.21891	.211	-.7058	.1567
	Elementary school competed	.13828	.16379	.399	-.1844	.4609
	Secondary school completed	-.06192	.13039	.635	-.3188	.1949
	College and higher education completed	-.84966*	.13469	.000	-1.1150	-.5843
Read and write	Illiterate	.27452	.21891	.211	-.1567	.7058
	Elementary school competed	.41280	.21998	.062	-.0205	.8461
	Secondary school completed	.21260	.19638	.280	-.1743	.5994
	College and higher education completed	-.57514*	.19927	.004	-.9677	-.1826
Elementary school completed	Illiterate	-.13828	.16379	.399	-.4609	.1844
	Read and write	-.41280	.21998	.062	-.8461	.0205
	Secondary school completed	-.20020	.13218	.131	-.4606	.0602
	College and higher education completed	-.98794*	.13643	.000	-1.2567	-.7192
Secondary school completed	Illiterate	.06192	.13039	.635	-.1949	.3188
	Read and write	-.21260	.19638	.280	-.5994	.1743
	Elementary school competed	.20020	.13218	.131	-.0602	.4606
	College and higher education completed	-.78774*	.09373	.000	-.9724	-.6031
College and higher education completed	Illiterate	.84966*	.13469	.000	.5843	1.1150
	Read and write	.57514*	.19927	.004	.1826	.9677
	Elementary school competed	.98794*	.13643	.000	.7192	1.2567
	Secondary school completed	.78774*	.09373	.000	.6031	.9724

\*. The mean difference is significant at 0.05 level.

**Appendix (J) Post hoc Comparison-Anxiety Score Difference Based on Educational Status**

		LSD Post hoc Comparison			95% Confidence Interval	
(I) educational status of the respondent	(J) educational status of the respondent	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Illiterate	Read and write	-.27183	.22756	.233	-.7201	.1764
	Elementary school completed	.01249	.17027	.942	-.3229	.3479
	Secondary school completed	-.26975*	.13554	.048	-.5368	-.0028
	College and higher education completed	-1.27740*	.14002	.000	-1.5532	-1.0016
Read and write	Illiterate	.27183	.22756	.233	-.1764	.7201
	Elementary school completed	.28432	.22868	.215	-.1662	.7348
	Secondary school completed	.00208	.20414	.992	-.4001	.4042
	College and higher education completed	-1.00557*	.20714	.000	-1.4136	-.5975
Elementary school completed	Illiterate	-.01249	.17027	.942	-.3479	.3229
	Read and write	-.28432	.22868	.215	-.7348	.1662
	Secondary school completed	-.28224*	.13740	.041	-.5529	-.0116
	College and higher education completed	-1.28989*	.14182	.000	-1.5693	-1.0105
Secondary school completed	Illiterate	.26975*	.13554	.048	.0028	.5368
	Read and write	-.00208	.20414	.992	-.4042	.4001
	Elementary school completed	.28224*	.13740	.041	.0116	.5529
	College and higher education completed	-1.00764*	.09743	.000	-1.1996	-.8157
College and higher education completed	Illiterate	1.27740*	.14002	.000	1.0016	1.5532
	Read and write	1.00557*	.20714	.000	.5975	1.4136
	Elementary school completed	1.28989*	.14182	.000	1.0105	1.5693
	Secondary school completed	1.00764*	.09743	.000	.8157	1.1996

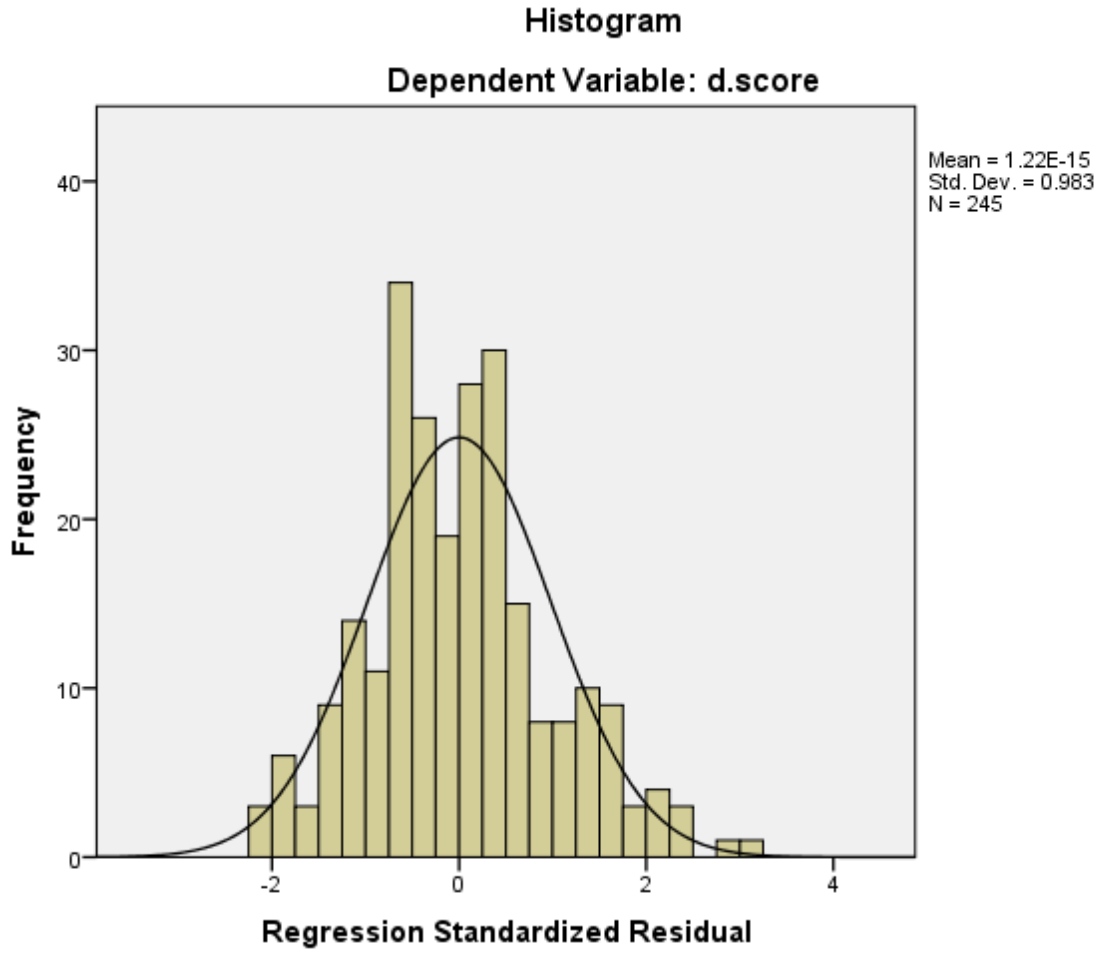
\*. The mean difference is significant at 0.05 level.

**Appendix (K) Post hoc Comparison-Stress Score Difference Based on Educational Status**

LSD post hoc Comparison						
(I) educational status of the respondent	(J) educational status of the respondent	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound Upper Bound	
Illiterate	Read and write	-.10748	.21569	.619	-.5324	.3174
	Elementary school completed	.17452	.16138	.281	-.1434	.4924
	Secondary school completed	-.17432	.12847	.176	-.4274	.0787
	College and higher education completed	-1.06481*	.13271	.000	-1.3262	-.8034
Read and write	Illiterate	.10748	.21569	.619	-.3174	.5324
	Elementary school completed	.28200	.21675	.194	-.1450	.7090
	Secondary school completed	-.06684	.19349	.730	-.4480	.3143
	College and higher education completed	-.95733*	.19633	.000	-1.3441	-.5706
Elementary school completed	Illiterate	-.17452	.16138	.281	-.4924	.1434
	Read and write	-.28200	.21675	.194	-.7090	.1450
	Secondary school completed	-.34884*	.13023	.008	-.6054	-.0923
	College and higher education completed	-1.23933*	.13442	.000	-1.5041	-.9745
Secondary school completed	Illiterate	.17432	.12847	.176	-.0787	.4274
	Read and write	.06684	.19349	.730	-.3143	.4480
	Elementary school completed	.34884*	.13023	.008	.0923	.6054
	College and higher education completed	-.89049*	.09235	.000	-1.0724	-.7086
College and higher education completed	Illiterate	1.06481*	.13271	.000	.8034	1.3262
	Read and write	.95733*	.19633	.000	.5706	1.3441
	Elementary school completed	1.23933*	.13442	.000	.9745	1.5041
	Secondary school completed	.89049*	.09235	.000	.7086	1.0724

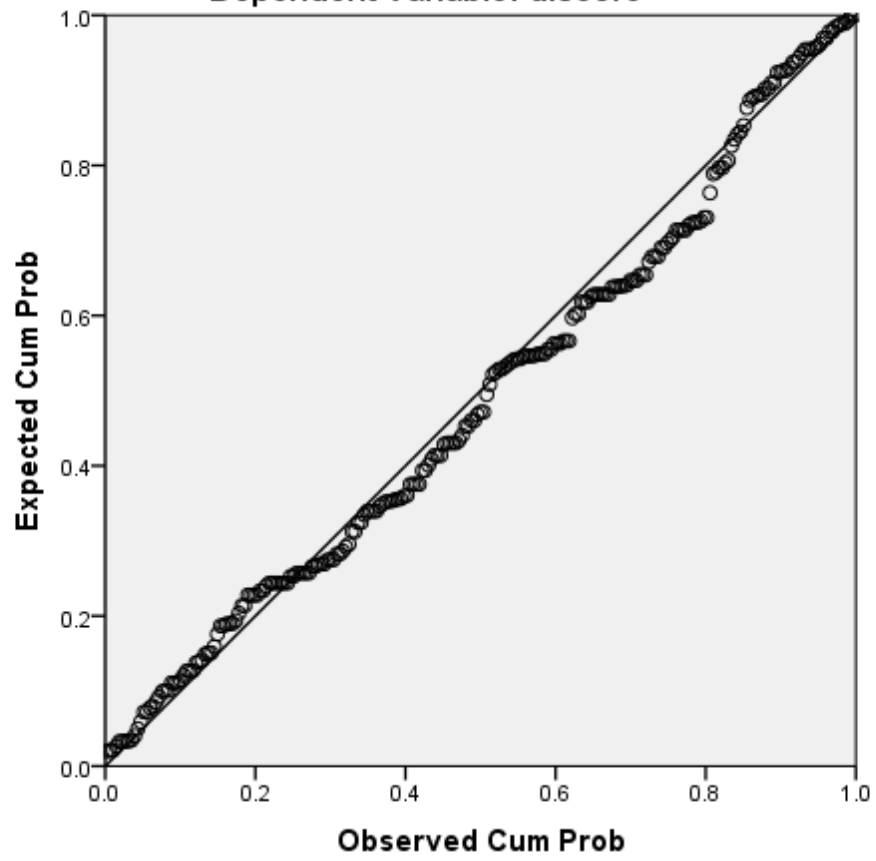
\*. The mean difference is significant at 0.05 level.

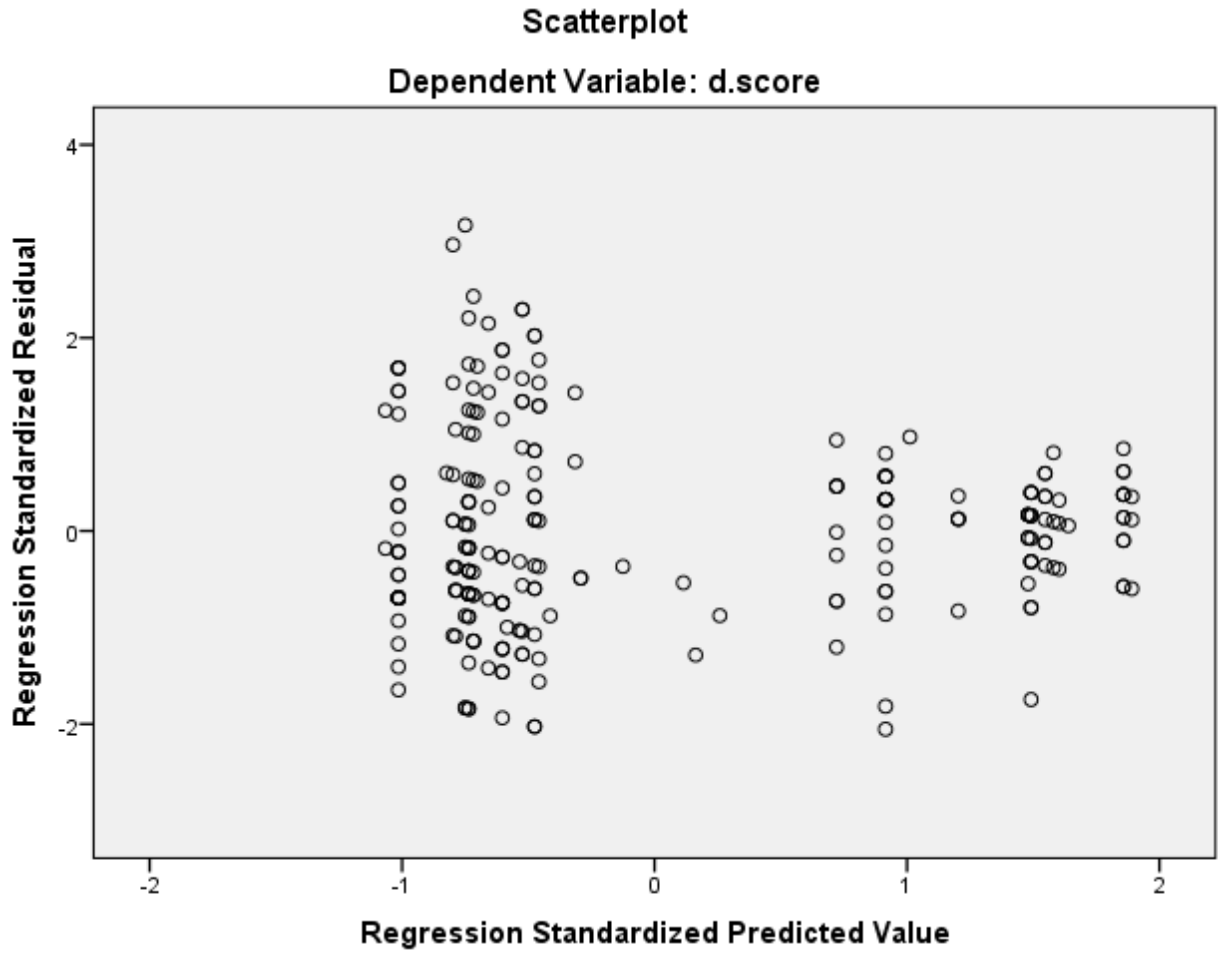
Appendix (L): Charts

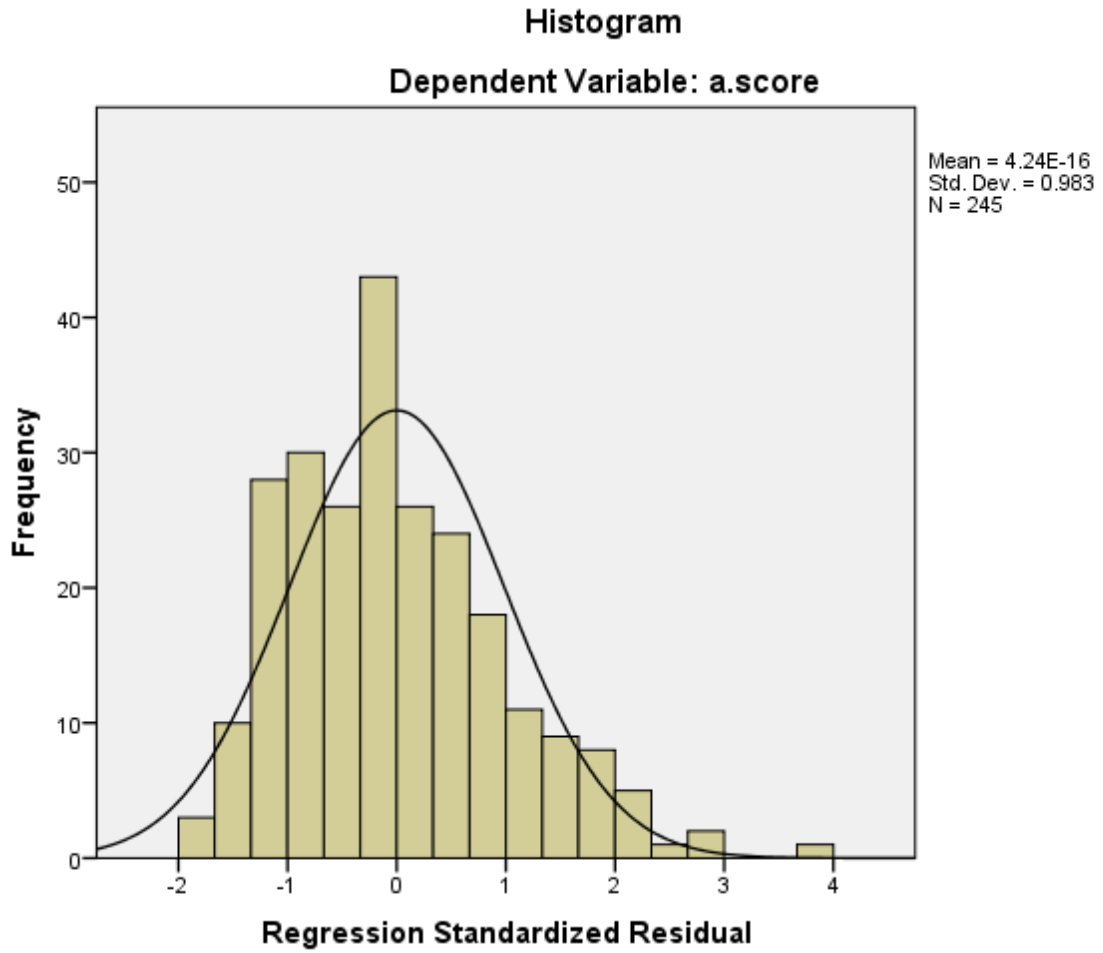


**Normal P-P Plot of Regression Standardized Residual**

**Dependent Variable: d.score**

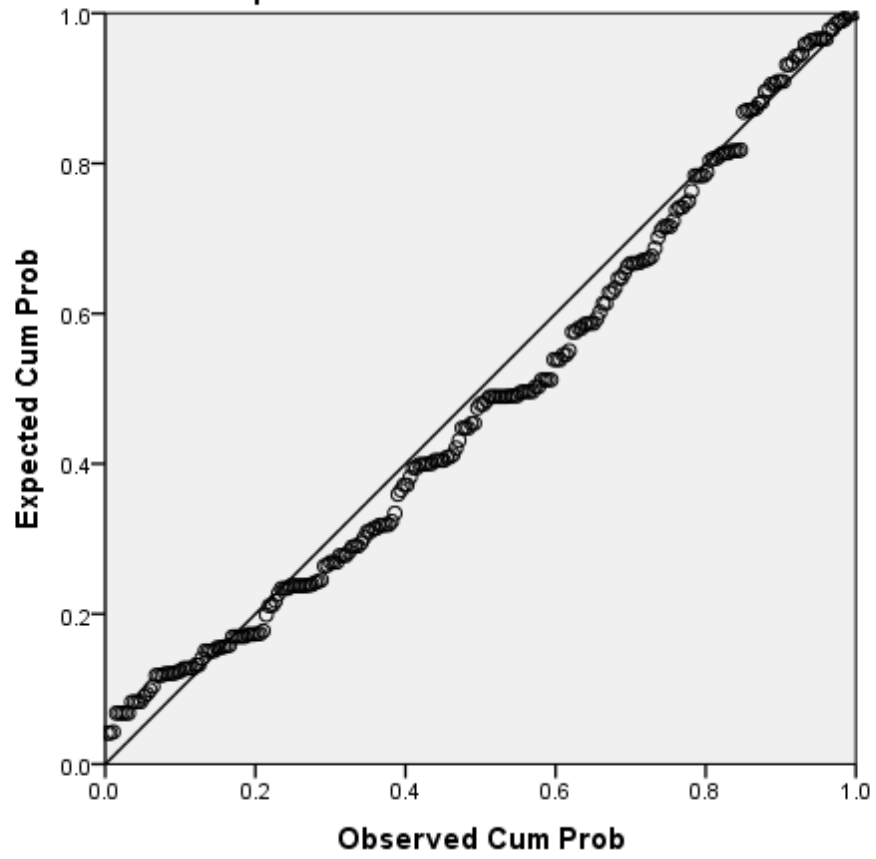


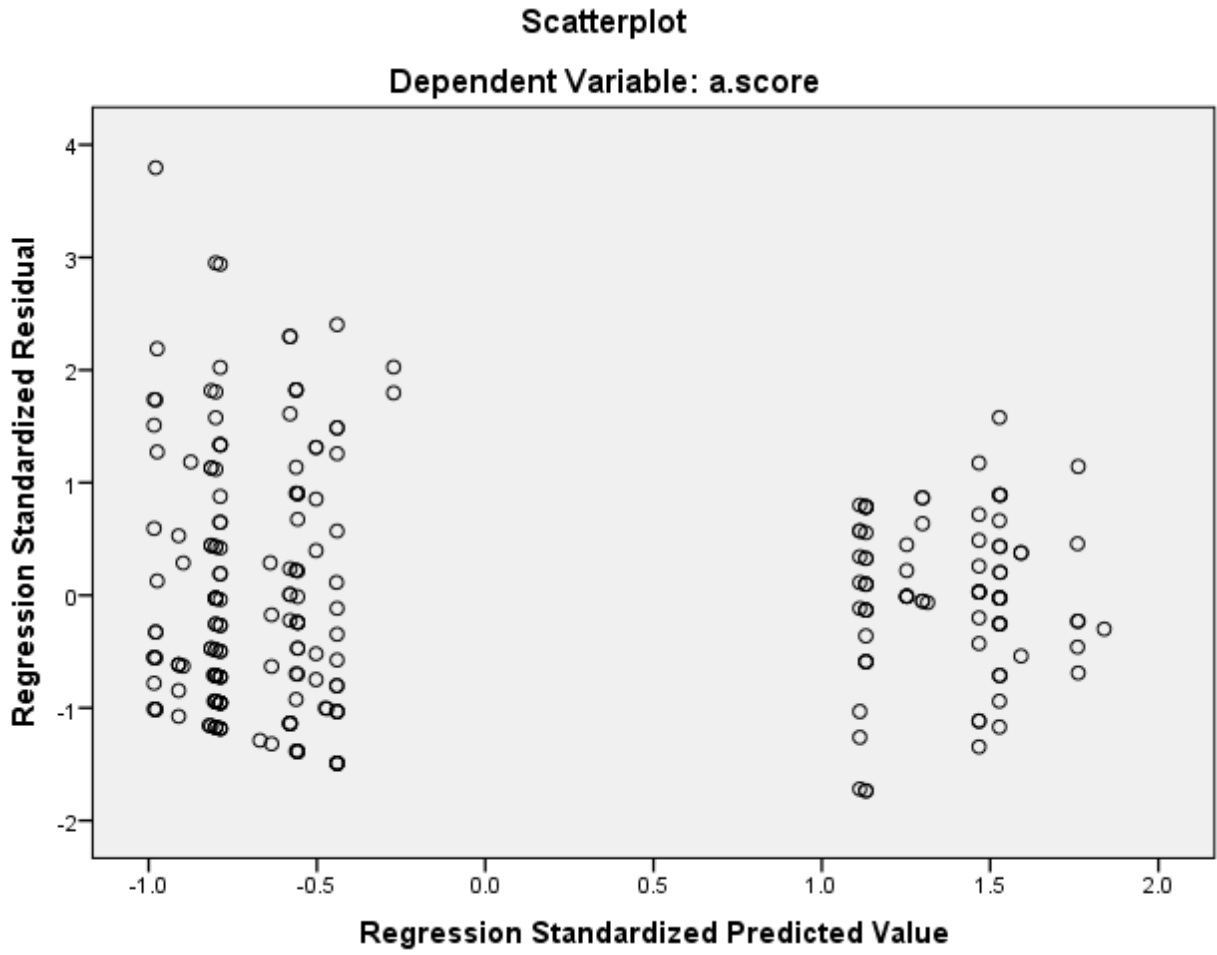


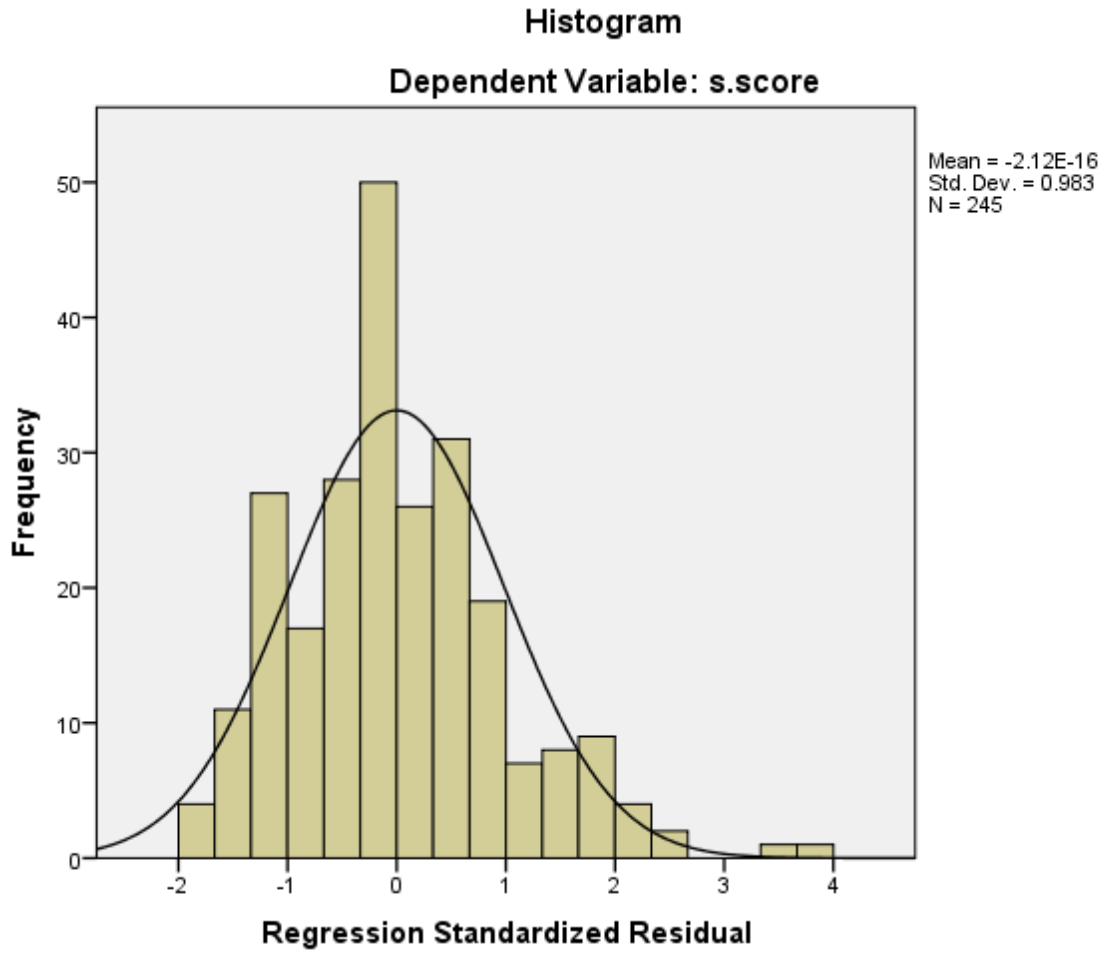


**Normal P-P Plot of Regression Standardized Residual**

**Dependent Variable: a.score**







**Normal P-P Plot of Regression Standardized Residual**

**Dependent Variable: s.score**

