ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES

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Depression, Anxiety, Stress, and Academic Achievements among Undergraduate Medical Students of Saint Paul's Hospital Millennium Medical College in Addis Ababa, Ethiopia

By:

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A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Counseling.

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ACRONYMS

CI	Confidence Interval
DAS	Depression, Anxiety, Stress
IRB	Institutional Review Board
SD	Standard Deviation
SPHMMC	Saint Paul Hospital millennium Medical College
SPSS	Statistical Package for the Social Sciences
UMS	Undergraduate Medical students

Abstract

The overriding purpose of this study is to assess the over all association between depression, Anxiety, stress and academic achievement among undergraduate medical students. The study was conducted in saint Paul hospital millennium medical college in Gulele sub city Addis Ababa. Stratified random sampling methods were used to used to select the respondents of the study among 719 students enrolled in saint Paul hospital millennium medical college during 2005-2010 academic year. The quantitative data was gathered by the help of self administer validate questionnaire and was analyzed by the help descriptive statistics that consist o weighted inferential by Pearson chi-square test and one way analyses of ANOVA. As finding of study Chi-square test analyses of the association between prevalence of DAS and academic achievements' of medical students found that there was a statistically significant association between levels of anxiety and students' academic achievement at less than 0.05 significant level ($X2=20.02, p<0.05$). However, statistically significant associations were not observed between level of depression and stress with academic achievements' of medical students in the study site during the survey period. The overall prevalence of depression, anxiety and stress among the respondents were 47.5%, 61.2% and 36.6%, respectively using the standard DAS 42 questionnaire. These figures are too high by any standards. So, to mitigate the problem, the stakeholders including health professionals would better give awareness about the overall problems accompanied by depression, anxiety and stress. Since this study found that statistically significant association between levels of anxiety and students' academic achievement using chi-square test analyses, stake holders shall be in a better commitment position to seriously advice their students about how anxiety affects their academic performance. Monitoring and evaluation strategy shall also be introduce

Key Words ; Depression, Anxiety, Stress, Medical Students

CHAPTER ONE

INTRODUCTION

1.1Background of The Study

Globally, at the present days, depression, anxiety and stress are common among college students though the prevalence and severity of occurrences have been varying among develop and developing nations. For instance, from developed nations, about 30 % of American college students' are depressed (ACHA, 2011); 35% of Australian law students' experienced psychological distress (Kelk et al., 2013) and 13% of Swedish medical students suffered from depression (Jadoon et al., 2010).In developing nations, about 29.1% of Indian medical students are depressed (Sidana et al., 2012) and 43.8% of Pakistan medical students were experienced depression (Dahlin and Runeson, 2007).

Moreover, Iqbal *et al.* (2015) confirmed that more than half of the medical undergraduate students were found to be affected by depression, anxiety and stress. Kumer *et al.(*2015) also reported that the prevalence of mental health problem like depression, anxiety and stress were more than 30% among medical students in Mysore, Karnataka, India. On the same line, a study conducted by Navees *et al.* (2015) in Bangalore on stress, anxiety and depression among selected medical and engineering students revealed that 33.6%,49.3% and 37.8% of the sampled students were suffered from stress, anxiety and depression, respectively during their survey period. Bibi and Nasir (2015) confirmed that there were a high baseline level of depression, anxiety and stress among medical students in *Alfaisal* University, Riyadh, Saudi Arabia.

Medical school is often acknowledged as a stressful environment that often has a negative effect on students' academic performance, physical health, and psychosocial well-being (Saravanan and Wilks, 2014).Psychological disorders like anxiety, depression and stress significantly exacerbate the pressure on students to perform better. These psychological

problems badly affect the health as well as the academic achievement of students (Mohamed et al., 2016).

College and University days are not always only pleasant but students have tackle lots of problems as well, they have time shortage for preparing exams because of overloaded syllabus, anxiety about getting expected marks in their examinations and etc. They always think about their future which arise anxiety later stress then depression even suicidal tendencies. High levels of stress in college students not only affect their academic performance but also affect their health conditions (Kumar et al., 2014). Students experiencing test anxiety may do poorly on an exam even if they know the material better than their classmate. Depression in young adults is a serious public health problem, and at the same times a source of immense human suffering (Adewuya et al., 2006).

Some studies confirmed that high prevalence of mental distress among college students compared to the general population (Stallman, 2010), particularly excessively high prevalence among medical students owing to the unique setting of their living condition which exposes them to other dynamics like added stress to academic challenges, social interaction within the mixed cultural pool and separation from pre-existing social support (Kumaraswamy, 2013).Likewise, Sharma *et al.* (2016) confirmed that there is a high prevalence of academic stress and anxiety among nursing students due to excessive competition, study of new subjects, change in environment, came far from their homes and family, and study in university. Therefore, the intent of this thesis is to investigate the prevalence of dispersion, anxiety and stress, and academic achievement of medical college students in Addis Ababa, Ethiopia.

1.2 Statement of the Problem

Currently, Medical college students have often faced complex psychological problems (depression, anxiety and stress) ever before because of greater academic demand and computations, being independent to their families, living in a new environment, change in social life, exposure to new people's idea and temptation (Kumaraswamy, 2013).Additionally, More than 50% of investigated dental students' were found to be anomalous thereby their status of depression, anxiety and stress became too high (Sumeya et al., 2017).

It has been argued that depression, anxiety and stress were found to be interrelated to each other and become sever in colleges as well as university medical students. The overlapping symptoms of these three psychological problems can lead to poor academic performance of students. To this effect, depression, anxiety and stress are negatively correlated with academic achievement of college students in different grade levels. For instance, depression was more frequent among first-year students, students in a poor economic situation and those who were not satisfied with their medical education (Bulent et al., 2017).Derby *et al.* (2005) acknowledged that medical students faced significant stress at the beginning of the training process thereby impede their academic performance; Mohamed *et al.* (2016) also confirmed that more than half of their respondents had different grades of depression, anxiety and stress. Yusoff *et al.* (2013) were reported that healthy students developed depression and stress after commencing their medical education. However, students' stress becomes dropped in the subsequent years of trainings because of adaptation in curriculum and environment (Borjalilu et al., 2015).

College students, particularly medical students' stress, anxiety and depression have been associated in a variety of negative out comes like general and health related quality of life (Troyer et al., 1990 cited in Mohamed et al., 2017) besides academic failures. As a result, medical students can experience an alarming amount of stress associated anxiety, depression, substance abuse and even suicide (Roya and Joseph, 2012).But, the question is what makes medical students highly susceptible to stress, anxiety and depression, and their association with the academic performance in the study area?

In addition, the researcher has two basic reasons for conducting the current research in Saint Paul Hospital Millennium Medical College in Addis Ababa. Firstly, despite the issue is cross cutting, still now there was not adequate research work targeting on medical students' academic performance association with depression, anxiety and stress in Ethiopia. Secondly, as the best of the researcher knowledge, there is no empirical study on the association of medical college students' depression, anxiety and stress, and their academic achievement in the study area. Therefore, this study hops to fill this gap by due attention on medical college students psychological problems associated with their academic achievements.

1.3 Objectives of the Study

1.3.1 General Objective

The overriding objective of this study is to assess the overall association between depression, anxiety, stress, and academic achievement among medical undergraduate students at Saint Paul Hospital Millennium Medical College (SPHMMC) in Addis Ababa, Ethiopia.

More specifically, the study aspires to:

- ☞ Identify the prevalence of student depression, anxiety and stress among medical college students in the study area.
- ☞ Assess the prevalence of depression, anxiety and stress across different years of study among medical college students in the study area.
- ☞ Examine the relationship between depression, anxiety and stress, and academic achievements of medical college students in the study area.

1.4 Significant of the Study

Exploring the existing prevalence and association between depression, anxiety and stress, and academic achievement of undergraduate medical students will have both academic and practical significance:

Academically, the finding of this study is expected to have theoretical significance and contribute towards bridging the literature gaps on the association between students' psychological disorders and their educational achievements. It also gives methodological and problem formulation insight for researchers and students who are interested in under taking similar research for further investigation in the same or other areas.

Practically, the thesis will help to the college management bodies to be aware of the current psychological well-being of students and enable to intervene accordingly. The findings of the study also will be useful in assisting educators, counselors, psychologists, and researchers to develop intervention strategies to enhance students' psychological well-being at the college and university level.

1.5 Delimitation of the Study/Scope of the study

Although college students' depression, anxiety and stress, and associations with their academic achievements is quite a burning issue in which the problem may be more prevalent in all higher institutions of Ethiopia, this study is entirely focused only on medical college students at Saint Paul's Hospital Millennium Medical College (SPHMMC) in Addis Ababa. This is because of time, finance, resource and executive constraints.

1.6 Limitation of The Study

It was very difficult for the researcher to undertake the study completely without any problem or limitation. In some ways, this study was believed to have certain limitations. Since the issue is too sensitive, it is very difficult to get genuine information through self-reporting survey questionnaire. Thus, it would have been better and more effective if the researcher employed other methods to supplement or against the findings of survey questionnaire. In tandem to these,

as the study subjects are medical students in which the course load and practical attachment in part make them busy, they were reluctant to fill the questionnaires. However, the researcher tried her best to get positive informed consent from the participants. Thus, the findings of this study might not give us wide and deep insights into the association between depression, anxiety and stress, and academic achievement. Therefore, these and other similar problems could affect the quality of the study which in turn might have led to inconclusive results.

1.7 Operational Definition of words

Depression- condition that is marked by sadness, emptiness, hopelessness, and loss of interest for most of the day.

Anxiety- is more related to autonomic arousal, skeletal muscle tension, and situational aspect.

Stress - refers to the sum of physical, mental and emotional stress or tension on a person.

Medical students- students who join medicine for doctorial degree.

1.8 Organization of The thesis

The study is organized into five chapters. The first chapter is the introductory part of the study which contains background of the study, statement of the problem, objectives of the study, significance of the study, scope of the study, limitation of the study and organization of the study. The second chapter devotes to the presentation of literature reviews of related research and conceptual framework.

The third chapter deals with research methodology of the study which includes the research design, data sources, instruments and procedures of data collection, sampling strategy and sample size, data analysis and presentation, validity and reliability, ethical considerations. The fourth chapter is the analysis and discussion of data collected. The final chapter concludes the results obtained from the findings and suggests the necessary recommendations; and finally attached lists of references and annexes relevant for the study.

CHAPTER TWO

RELATED REVIEW OF LITERATURES

2.1Definition and Conceptualization of Depression, Anxiety and Stress (DAS)

2.1.1 Depression

The concepts of mental disorder in general and depression in particular remain unclear and no consensual definitions are yet well-known although broadly discussed in various studies (Widiger and Sankis, 2000). However, scholars define depression differently according to their intent, contexts and their perceptions. For instance, Ness and Ellsworth (2009) contested that depression embodies a break dawn in a progressed and otherwise adaptive response to shortage or loss; it is a mental state in which one suffers sadness (Sharma and Pandey, 2017); it is a form of mental health problem (Zivin, 2009) and it is a common but serious mental illness typically marked by sad or anxious feelings (National Institute of Mental Health (NIMH), 2009). APA(2013) describes the word "depression" as a condition that is manifested in un happiness, shallow, uselessness and out of being worth.

There are many symptoms of depression though differ from person to person. However, Eller and Veldi (2006) described depression as continuous worried or absence of good feelings, feelings of desperateness, feelings of wrong, worthlessness and/or helplessness, bad temper, anxiety, and loss of interest in activities or hobbies once enjoyable. In addition, Kumer*et al.* (2009) also contested that depression is considered as a mood disorder. According to Marcus *et al.* (2012), there are 4 groups of symptoms of depression on which the problem is appeared: emotional, cognitive, motivation and physical. They also latter described the term "depression" as absence of interest or happiness, sadness, feelings of fault or low self-worth, disturbed sleep or hungriness, dangerous sleepiness, and lack of concentration. A person could be referred to be depressed if he/she displays one or amalgamation of the following variables-absence of good mood, lack of pleasure, feelings of in responsibility, lack of self-confident, loss of drinking and eating feelings, unable to get enough sleep or loos of giving focus on things (Marcus et al., 2014).

2.1.2 Anxiety

Like depression, no consensus definition given to anxiety. However, Prior scholars in the field of psychology define "anxiety" as their understanding on the issue itself. To this effects to ssell (2006) defined anxiety as a function of biology and view point, physical and attention, nature and motive, behavior and values. It is also experienced at psychic and psychological levels. It is scientifically measurable at the molecular level and the physiological level. It is produced by nature and nurture. It is also refers to a psychological phenomenon and cultural occurrence. In computer terms, it is both external constraints (wired badly) and a software problem (run faulty logic that make think anxiously)

Seligman and his colleagues (2000) defined anxiety as a psychological and physiological state characterized by mental, somatic, emotional, and social modules. These components combine to create an unpleasant feeling that is typically associated with discomfort, distress, or worry and stress.

Anxiety is more associated with involuntary provocation, body stress and conditional facets, whereas stress is more related to touchiness, annoyance and un able to be free. It is a response of body to a perceived threat which is triggered by once principles, state of mind, and views and it is manifested by anxious feelings, strain, rapid blood circulation, disturbed heartbeat, perspiring, and unable to swallow food, weakness and strong pain above the abdomen. Worldwide about 272.2 million people have anxiety disorder about 14.0% of the European population (Wittchen et al., 2011). Literatures indicated that there are various predictors of anxiety. For instance, Yeshaw and Mosie (2016) dectated that anxiety was found to be associated with age, educational status, matrimoniallevel, income, intesity of resting period, occupationalpleasure, dis agreement with friends, alcohol use andhewing chat. Nevertheless, income, taking chat regularly, dis agreement with friends, and ocupational pleasure of respondents were significantly related with anxiety at their final model.

2.1.3 Stress

Like the other psychological disorders, stress also lacks standard definition because of subjectivity, multidimensionality and lack of demarcation in the concept. Despite these facts, prominent scholars tried their best to define the word stress. For instance Quyen (2007) explain the word stress as the aggregate of physical, mental and emotional tension on a person in specified period. The association or interaction between human being and their surroundings resulted in stress. Although stress is one of the mental disorders of human being prevails in ubiquitously and we all talk frequently about stress, still now absence of what stress really is about, the contraction related to it and its long term effect on once life. In addition scholars know some terms which have similar meaning with stress. These terms are worry, struggle, exhaustion, despair and burden. Many people consider stress is something that happens to them, an event such as injury or inspiration. Whereas others think stress is what happens to our bodies, essence and our performance in response to an event in all activities.

Stress also refers to the mental state which derives from the person's appraisal of the success with which he or she can adjust to pressures of the surrounding environment (Kumaraswamy, 2013). If a person has become in state of stress, his or her emotion begins to adjust the situation mentally, then he or she tries to reach a positive or negative decision and what skills and strategies he/she can use.

As a result, a positive or negative decision of the person evaluating with the pressure of the environment and the strategy they tried to adjust it but if the pressure of the environment surpass the strategy of decision, then we can say the situation is stress full. If so, he/she needs to react with stress response. However, if his /her strategy overwhelmingly over the pressure of the environment, the situation is not considered to be stress full. Of course, few conditions by themselves are considered to be stress aggravating, but they are our thoughts about situations which decide tangible constraints to us or not.

How we evaluate the general situations and examine the stress-provoking things, and the way we respond to them against their effect on our mental safety. When we answer to the situation negatively, our mental safety and pleasure affected. However, if we respond to the situation

positively to stress-provoking events, we can handle stress conditions more effectively (Abraham, 2000).

Stress may be understood as a state of tension experienced by individuals facing extraordinary demands, constraints or opportunities. The pressures of modern life, coupled with the demands of a job, can lead to emotional imbalances that are collectively labeled 'Stress'. However, stress is not always unpleasant. Stress is the spice of life and the absence of stress makes life dull, monotonous and spiritless (Alexander and wells, 1999).

With regard to the classification of stress, some scholar's identified three common groups of definitions: the first class is a stimulus, an environmental event, usually a threat that affects the body in complex ways; in this interpretation, stress is referred to as a "stressor", one that evokes complex reactions of the various systems of the body. A second class of definition is that stress is a bodily reaction to stressors; consequently, complex interaction of systems of the body can result in deleterious consequences to those systems and organs to the point of a person becoming "stressed out"; and serious illness can follow. These groups of definition was accepted by some contemporary scholars in the field of psychology.

Other type of stress lies between environmental proceedings (stressors) and emotion emanating tension that influences systems of the body and the resulting behavior feeds back to affect the environmental stressors. However, they can also lead in complex ways to a variety of mental or physical problems.

2.2 Global over view of Psychological Health Problems (Depression, Anxiety and Stress)

Worldwide about four hundred fifty million human beings are in state of mental health problems, of which, about 150 million are affected with depression (American Psychiatric Association, 2013). Depression is predicted to be the world's largest health problem by the year 2020 (Murray

and Lopez, 1996). Mental health is essential to be well-maintained as without good health we will not be able to live in a state of synchronization. World Health Organization (2014) defined the term “mental health” as a condition of warfare in which once realizes her or his capabilities to be in harmony with the stressors of this world, live in state of safety and prosperity.

Mental health is about how we feel about ourselves, others, and also how we are able to meet the demands of life (WHO, 2014). It is an escalating issue among professional accountants internationally, which requires serious attention from the community (Griffin, 2014).psychological wellbeing critically affect the advancement of human being and their ability to produce better. Consequently, have an impact on person's livelihood every where (Eisenberg, Golberstein, & Hunt, 2009).

2.3 Depression, Anxiety and Stress among students in Tertiary institutions (University)

Scholars claimed that university students have long been experienced all or either of the well-known psychological morbidities- Depression, Anxiety and Stress. In this regard, Stanley and Manthorpe (2001) indicated that tertiary level students were found to be more prone to psychological problems. There are high incidence of mental health distortion like sadness, anxious and tension with tertiary level students.(Nerdrum et al., 2006; Ovuga et al., 2006).

Edwards and Holden (2001) also acknowledged that among college students seeking counseling services, anxiety and depression were ranked first and third as presenting problems, respectively; whereas academic and work-related concerns were ranked second. Moreover, Brackney and Karabenick (1995) noted that high levels of distress, concomitant with limited coping resources, render students less able to meet academic demands. The higher level of psychiatric morbidity-depression 29.9%, anxiety 41.1% and stress 27% among undergraduate Nepanes medical students (Kunwar et al., 2016).

Kumarswamy (2013) acknowledged that psychological problem particularly the prevalence of stress was found to be high among 2nd year health students than the rest. This might be attributed to the un able to achieve their objective of being physician. Prior investigation of psychological

problems on students' showed that up to twenty percent of tertiary level students were found to be in state of mental health constraints (Stress, Anxiety & Depression). A recent study conducted by Mohammed et al., (2016) on DAS science and Art university students showed that girls are more depressed, anxious and stressed than male, meanwhile science students are more depressed, anxious and stressed than art students.

According to a Korean study, the prevalence of depression is 26.1% in men and 28.7% in women employees (Baxter, 2014). The study conducted in Ethiopia by Yigizie and Andualem (2017) on depression, anxiety, stress, and their associated factors among Jimma University staff demonstrated that depression, anxiety as well as tension became high among university staffs.

All of those disorders (DAS) became more common among khat chewers, those with no job satisfaction, and those who had conflict with their colleagues at the workplace. Depression and stress became the problem of girls than boys. The existence or incidence tension or stress became very high among those who lost their spouse. From this finding it might be fair of tension was very high among those who lost their spouse. From this finding it might be fair to conclude that the severity of depression, anxiety, stress could be too high if the target population could have been medical students though no study is conducted over them.

Since medical education is somewhat socially and mentally higher levels ranking in the society, meaningful career promoting health and caring for the sick (Vaidya and Mulgaonkar, 2007), students are often confronted with significant stressors (Aktekin et al., 2001).

2.4 Depression, Anxiety and Stress (DAS) among Medical Students

Medical education throughout the world is considered as being somewhat hard and demanding. Studies on psychological problems such as stress, depression and anxiety among medical students showed that these problems are not considered properly at all (Manjunath et al., 2013). However, some studies gave great emphasis to investigate these common psychological

problems. For example, Khan et al. (2017) conducted a research on psychosocial well-being of Undergraduate Medical Students of King Edward Medical University, Lahore using DASS 21 scoring questionnaire and found that 36.6% were categorized as normal stress, 17.4% as mild stress, 23.6% as moderate stress, 16.6% as severe and 5.7% as extremely severe stress. With regard to severity of anxiety, 21.4% were categorized as normal. 6.3% were suffering from mild anxiety; 22.4%, 19.0% and 30.9% were suffering from moderate, severe and extremely severe anxiety respectively. Severity of depression scale showed that 30.5% students were normal, 13.1%, 26.1%, 13.7% and 16.6% were categorized as suffering from mild, moderate, severe and extremely severe depression respectively. Females were found to be suffering from slightly more stress as compared to males, whereas the gender difference for anxiety and depression was not significant.

A study by Kunwar et al. (2016) on study on anxiety, stress and depression within the medical students in two medical colleges of Nepal demonstrated that the incidence of anxiety, stress and depression was found to be 41.1%, 27% and 29.9% respectively. Similarly, Kulsoom and Afser (2015) in there study of stress, anxiety, and depression among medical students in a multiethnic setting in Saudi Arabia displayed that university students' prevalence of stress, anxiety and depression high, and became too high in exam time, particularly among those who took preparatory examination for joining medical school and those who came from the town of SaudiArabia.

On the other hand, girls and those who smoke cigarettes students recorded higher prevalences of the three well known psychological problems. Moreover, a critical study by Ghada et al. (2016) entitled on predictors and incidence of DAS within Zagazig University Students in Egypt showed that the final model predicted that the incidence of DAS problem in their studied samples was found to be 40%, 45%, 33.6%, respectively. Numerous socio-demographic, standard of living, households' status and levels of education influences have been ominously related with the three psychological disorders (DAS)such as types of university, sex, age, place of living, educational performance, persistent physical workout, custom of sleeping period and taking cigarettes and other domestic and speculative constraints.

A study in India on the three psychological disorders (DAS) within students' of Mysore medical school by Kumar *et la.* (2016) displayed that prevalence of mental health problems were more than 30% among medical students. As most of the respondents were found to be mildly, their study recommended that the problem had better be addressed as soon as possible before changed in to moderate or severe condition. The study also concluded that students' distress may influence professional development and adversely impact academic performance contributing a lot for taking drags, cheating, increases drop out and withdrawal.

A cross-sectional study entitled on depression, anxiety & stress in Sudanese medical Students on the role of quality of life and social support by Mohamed et al. (2016) depicted that medical students expressed high prevalence these three psychological problems (DAS)of different grades.

The quality of surrounding environment and maintenance of physical health seems to be one of factors in preservation of student mental health. Likewise, a comparative study by Naveees*et al.* (2015) on depression, anxiety and stress within students' of selected medical & engineering universities, Bangalore demonstrated that among their sample students 33.6 % suffered from stress, 49.3% suffered from anxiety and 37.8% suffered from depression in varying levels of severity.

Roy et al. (2015) done a research on Depression, anxiety and stress among first year undergraduate medical students in India and found that significant increase in tension, nervousness and depression level when they are approached to examination period without differentiation in gender of students.

However, the study concluded that girls were found to be more depressed than boys before and after examination. On the other hand, the prevalence of anxiety not differs by gender during their survey period before and after examination. But, level of stress significantly differs in gender with varying level of severity. Patnaik*et al.* (2015) conducted a research on depression, anxiety & stress within the freshman students' of Medical school using cross sectional study design and reported that significant proportion of freshman students' were found to be stressed and depressed, and scored higher levels of anxiety.

Iqbal and his friends (2015) also done a research entitled stress, anxiety & depression among medical undergraduate students & their socio-demographic correlates. They found that greater than half (50%) of the sample students were affected by depression (51.3%), anxiety (66.9%) and stress (53%). Morbidity was found to be more in 5th semester students rather than students of 2ndsemester. Females reported higher score as compared to their male counterparts.

All in all, Dyrbye et al. (2006) systematically reviewed over 40 articles related to mental problems within medical students in their work of entitled on logical appraisal of depression, anxiety, and other indicators of mental distress among students' of Canadian and U.S medical schools. Most of the article indicated that higher incidence of depression and anxiety had been recorded among medical students in which the prevalence of depression and anxiety were significantly higher than the rest of the population. over all, the researches conceptualized that mental problems became too high among those who give care for patients either in volunteer or employee base before applying to join medical education.

In addition to identifying individuals having strong motivation and ability in studying medicine, the journey as well as the process of being doctor needs strong commitment, patience, devotion ,persistent follow up, satisfaction and others. Once enrolled, students and schools make a mutual commitment intended to prepare students for a socially useful and personally fulfilling career. Based on these characteristics, one may anticipate medical school would be a time of personal growth, fulfillment, and well-being despite its challenges. Unfortunately, studies suggest the current educational process may have an inadvertent negative effect on students' mental health, with a high frequency of depression, anxiety, and stress among female students. Limited data were available regarding the causes of student distress and its impact on academic performance, dropout rates, and professional development.

2.4 Predictors of Academic Performance of Students

Academic performance has become relevant in all levels of education, that is, from kindergarten (KG) to University. For instance, in kindergarten, primary and secondary school levels of education, students are given report cards to inform their parents on how they are doing. After high school this pattern also continues in different form.

Students in the higher institutions (colleges and universities) are given their grade report having cumulative grade point (CGPA) showing their performance in each semester. Higher educational settings reinforce the message that performing well academically is critical to being successful. Most of the tertiary level schools allocate huge capital for the successful accomplishment of their students through giving continuous tutor, worksheet, test-retest and provisions of materials (Bisson, 2017). By doing these, some students scored higher depending on their back ground knowledge, intellectual aptitude, cognitive ability, physical health, motivation mental health and so on(Dusselier, Dunn, Wang, Shelley, & Whalen, 2005).Past academic performance and standardized testing influence academic performance of university students (Larson, Orr, & Warne, 2016). Thus, most of the time, standardized test scores and GPA are frequently used to measure intellectual aptitude.

However, because of the subjectivity nature of grade, scholars are in state of dis agreement as how effectively grades measure academic performance. Some of the scholars argued that grades given by different professors can vary significantly for identical work. Some may even say that this subjectivity undermines a GPA as a reliable measurement of academic achievement (Koper, Felton, Sanney, & Mitchell, 2015).

Therefore, GPA is not shown the exact performance of students in the school. Others argued that in every circumstance students are judged as per their GPA. For instance, to get scholar ship, to earn funds or financial aid, to promote to the next higher level, to pursue their education and to elite, the critical and fundamental base is their GPA. Of course, it is often a defective system, but grading as means of evolution has been used by selected colleges and universities as early as the 1860s (Bluemle, 2002). Felton and Koper (2005) also reported that as the educational

institutions necessitates distinct evaluation of academic performance; the focus of the work should be on grades since other forms of assessment are subject to the same limitations and political pressures that generate inflated grades. Other forms of evaluation can be no less dishonest than grades and would be redundant if relatively meaningful grading standards were in effect.

2.5 The Nexus Between Medical Students' Depression, Anxiety and Stress, and Academic achievements

Depression, anxiety & tension are strongly interconnected in more of their traits. The overlapping symptoms of these three psychological distresses can lead to all sorts of academic problems resulted in significant influence on students' academic performances. Saravana and Wilks (2014) reported that medical school is recognized as a stressful environment that often has a negative effect on students' academic performance, physical health, and psychosocial well-being.

It has also been found that students' performance in school, college as well as higher education affected by sighs of sadness and pessimist views (Stark and Brookman, 1994); tension (Dusselier et al.,2005) and worries (Anson et al., 1984) which could lead to difficulties in concentration, lack of motivation and absence of attentiveness, drop out, and mental health problem like severe pain of head and tiresomeness. With no doubt such circumstances influences students' academic achievement.

Depression found to be one of the greater psychological constraints that affect students' academic achievements in related to stress and anxiety (Showalter, 2010). Depression impedes our day to day life and resulted in inconvenient to the depressed and people around him. Tertiary level students' faced lots of persistent constraints like depart from their parents, confronted with new curriculum and circumstances which resulted in the prevalence of sadness (Nasrin, 2010). When students became very stressed and thought of their exams' result, he/she would be depressed. If the above signs of depressions persist in, the academic performance of students became at risk(Achar, 2000).Higher level of tension within college or university students gave rise to sadness, drug addicted and madness(Leta et al., 2015). They further acknowledged that

stress was a significant problem among medical students and had un wanted effect on students' academic performance.

Academic achievements' of tertiary level learners (their cumulative GPA) is influenced by a variety of factors like cognitive ability, physical health and mental health. Intellectual aptitude and other cognitive factors can have an impact on the way they did in their education in a higher educational setting. Only approximately twenty-five percent differences in academic performance is attributed to cognitive factors (Wolfe & Johnson, 1995 cited in Bisson, 2017).

The rest of the difference in performance can be attributed to factors related to physical and mental health. To understand mental health of college as well as university students, considering the developmental challenges and strengths that this demographic faces are equally significant. Larson et al. (2016) in their study on "using student health data to understand and promote better academic achievements in universities or colleges settings" demonstrated that both internal and external body issues threats the academic status of tertiary level students.

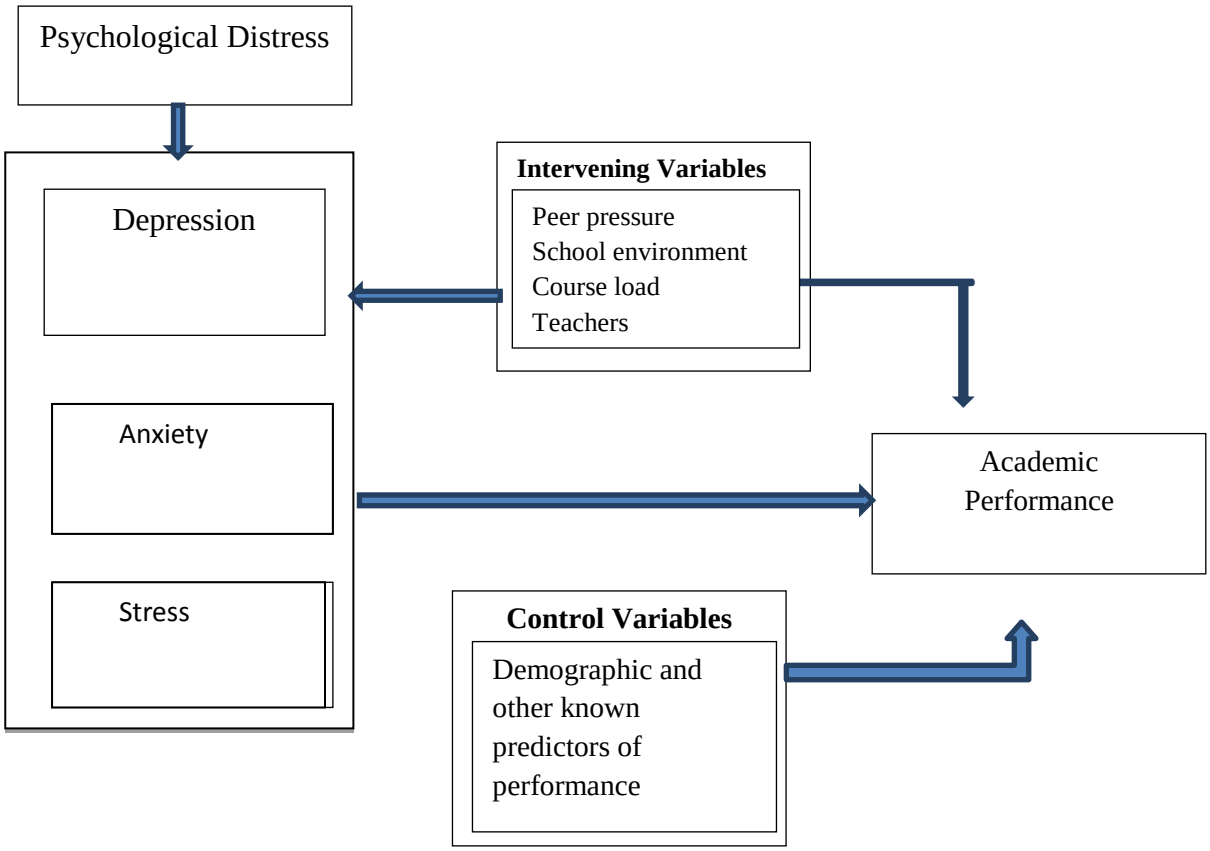
Among the external body health difficulties the study measured included asthma, dislikes, and mononucleosis, strep throat, and urinary tract infections. The study also reported that internal health issues were significantly and negatively associated with cumulative grade points. The results of the study also showed that physical health issues were often correlated with mental health issues. For example, students who had high levels of stress, or difficulties handling stress, reported physical health issues affecting their diet and sleep. In working with students with anxiety and depression, the physical health symptoms are often reported as the presenting problem because they are the symptoms that are externalized (Hartley, 2011).

Recently, Bisson (2017) conducted a research on the effect of Anxiety and Depression on College Students' Academic Performance and found that the association between educational achievement of students and anxiety were found to be in significant. The study also reported that genders of students were found to be best predictor in favor of female students that boys counter parts. Researchers also indicated that the current academic performances of students are positively influenced by their high school academic achievements. To sum up, psychological

distress, including depression and anxiety, has been associated with lower GPAs (Drybye, Thomas, & Shanafelt, 2006; Holliday et al., 2016). DAS were found to be the forefront and ubiquitous psychological problems that are reported by most tertiary level students.

Difficulties with mental health symptoms can become serious and even fatal if they go untreated. For instance, Duram (2009) reported that more than 80% of college students that committed suicides had no current or prior counseling.

Fig.2.1 Conceptual Framework of the Study



Source: Modified from Bisson (2017)

2.6. SUMMARY OF RELATED REVIEW LITERATURES

When we now a days depression, anxiety, stress and its association between academic achievement has become a significant contributing outcome in the assessment and improvement of students health to perform better globally about four hundred fifty million human beings are in state of mental health problems, of which, about 150 million are affected with depression (American Psychiatric Association, 2013). Depression is predicted to be the world's largest health problem by the year 2020 (Murray and Lopez, 1996). Mental health is essential to be well-maintained as without good health we will not be able to live in a state of synchronization. World Health Organization (2014) defined the term "mental health" as a condition of warfare in which once realizes her or his capabilities to be in harmony with the stressors of this world, live in state of safety and prosperity.

Mental health is about how we feel about ourselves, others, and also how we are able to meet the demands of life (WHO, 2014). It is an escalating issue among professional accountants internationally, which requires serious attention from the community (Griffin, 2014).psychological wellbeing critically affect the advancement of human being and their ability to produce better. Consequently, have an impact on person's livelihood everywhere (Eisenberg, Golberstein, & Hunt, 2009).

Edwards and Holden (2001) also acknowledged that among college students seeking counseling services, anxiety and depression were ranked first and third as presenting problems, respectively; whereas academic and work-related concerns were ranked second. A recent study conducted by Mohammed et al., (2016) on DAS science and Art university students showed that girls are more depressed, anxious and stressed than male, meanwhile science students are more depressed, anxious and stressed than art students.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1Study Area

St. Paul's hospital is the 2nd largest, next to Balack lion, hospital in our country, Ethiopia.It was established in 1961 by Emperor Haile sellase and now under the guidance of the Ethiopian Ministry of health. It primarily serves those unable to afford care elsewhere, providing services free of charge to 75% of its patients. Every year, the hospital provides more 110,000 referred patients or having acute health problem. These services have been delivered by more than 800 skilled and unskilled civil servants (Gizaw and Gebremedihn).

In 2007, St. Paul's added a medical college, St. Paul's Hospital Millennium Medical College (SPHMMC), with a current enrollment of 719 undergraduate medical students, 478 male and 241 female; 251 specialty students (Gynecology, general surgery, internal medicine, radiology, pediatrics, ophthalmology, orthopedics, ENT, urogynacology, ocnogynacoloy, maxillofacial and psychiatry) of which 172 are male and 79 are female. There are also 69 nursing specialty students (emergency, neonatal and Operation Theater) of which 38 are male and 31 are female and there is also MPH in Field epidemiology 22 male and 6 female, and 4 male students on fellowship program of maternal fetal medicine.

3.2. Study Design

A cross-sectional study design, up on the principle of quantitative research method, could be employed to address the objectives of the research.

3.3. Target Population/ Study Subjects

All under graduate medical students who were registered at SPHMMC from 2005 to 2010 year were the target of population of this study.

3.4. Sample Size Determination

To determine the minimum number of medical students to be included in the study, the standard statistical procedures and assumptions, proposed by Mark Wood (1992) will be used: The level of confidence of the study will be 95%, which gives Zα/2(z alpha over2) have a value of 1.96 ,under normal distribution, the margin of sampling error assumed to be 5%, the proportion of depression, anxiety and stress are assumed to be 50% because absence of previous study.

Therefore;

$$n = \frac{(Z\alpha/2)^2 * \alpha\ (1-\alpha)}{E^2}$$

$$n = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2} = 384$$

Where,

n = the required minimum sample size.

Level of confidence 95%, Zα/2 = 1.96.

d = Margin of sampling error, assumed to be 5%.

α = the association between DAS and academic achievement prevalence taken as 50%.

Since the study population is less than 10,000 (719), it will be adjusted using the finite population correction factor:

$fpn = \frac{n*N}{n+(N-1)} = \frac{384*719}{384+(719-1)}$= 250.54= 251 + 25(10% none response rate)

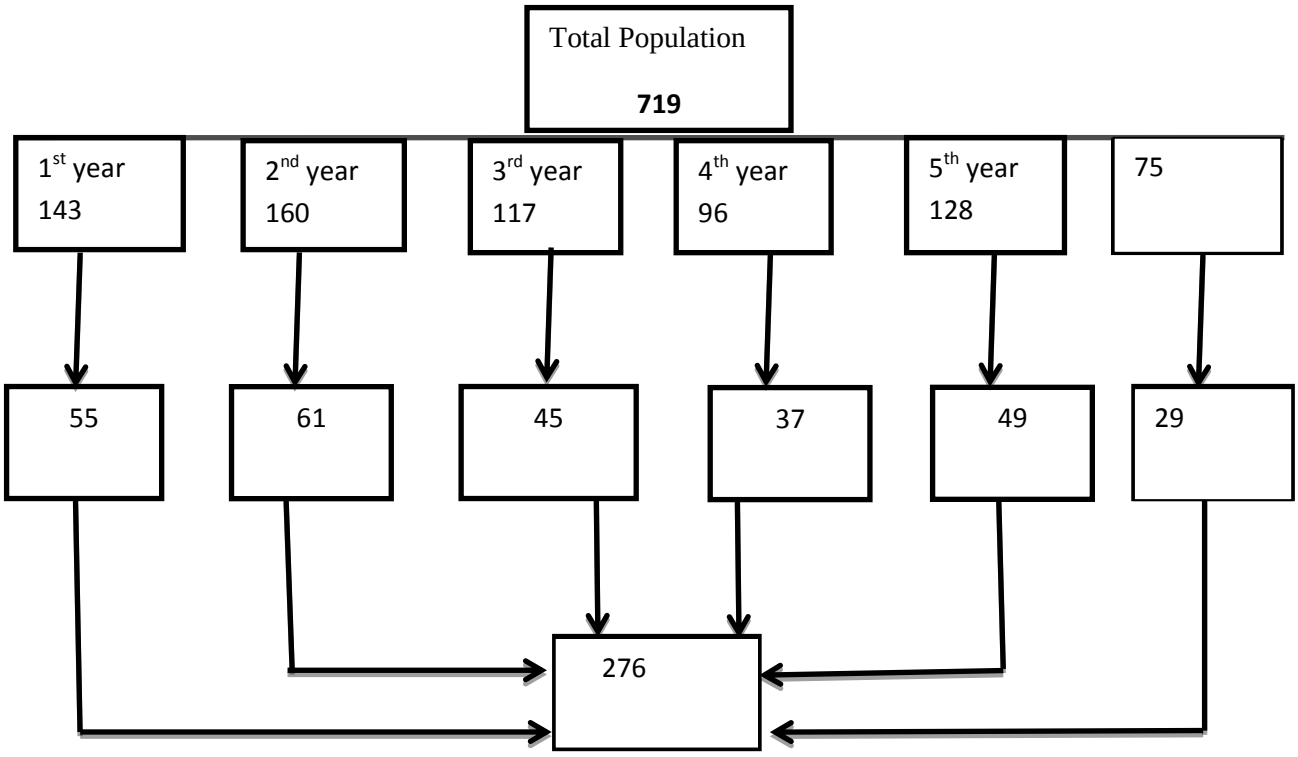
= 276

N= total population size =719, n= estimated sample size =384

3.5Sampling Procedure

To select the required sample size (276) from 719 target medical college students enrolled at SPHMMC, the researcher had under taken a series stage of selection. At the first stage, on the basis of students' years of study, stratification was done (1^{st} to 6^{th}years). At the second stage, based on probability proportional to size of each batch, the sample size was proportionally allocate to each batch. At the last stage, after knowing the number of students to be selected in their respective batch, using simple random sampling technique, the required sample size from each batch will be selected using students list as sampling frame.

Figure 1. Diagrammatic Scheme of Sampling procedures.



3.6. Method of Data Collection

The required data was collected using structured, self-administered questionnaire having three parts. The first part of the questionnaire included socio-demographic information of respondents. The second part of the questionnaire comprised the possible predictors of academic achievement (their GPA) of students. The third part of the questionnaire comprise DAS 42 self-reporting questionnaire. These questionnaires are first developed by Lovibond and Lovibond (1995).

These questionnaires are generic in nature and adapted to a variety of circumstances. The DAS 42questionnaires are composed of three domains: depression anxiety and stress. Each has 14 items. In other words, The DASS is a 42-item questionnaire which includes three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contains 14 items, divided into subscales of 2-5 items with similar content.

The depression scale assesses dysphoria, hopelessness, devaluation of life, self- deprecation, lack of interest/involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale (items) is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Respondents are asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state over the past week. Scores of depression, anxiety and stress are calculated by summing the scores for the relevant items. The depression scale items are 3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, 42. The anxiety scale items are 2, 4, 7, 9, 15, 19,20, 23, 25, 28, 30, 36, 40, 41. The stress scale items are 1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39.

Then, the English version of DAS 42 questionnaires were translated in to Amharic (the local) language by language and subject professionals to be sure of its representativeness as well as can be understand easily.

By synthesizing and analyzing these DAS 42 questionnaires, the presence of depression anxiety and stress among undergraduate medical students could be identified because these are previously validated and standardized instruments .All the data collected by the help of proctors (students' dormitory supervisor) after short trainings of how to approach and collect data from the respondents. The students were asked to rate their experience on each symptom on a4-point severity scale according to their ranging.

3.7 Data Analysis

To address the objectives of this thesis, both descriptive (percentages, mean and standard deviation) and inferential (Pearson chi square test and one way analysis of ANOVA) statistics were used. Excel spread sheet and SPSS version 24 software were used to analyze the data. Specifically, to address the first objective of the study (i.e to identify the prevalence of medical students' depression, anxiety and stress in the study area),the researcher followed Lovibond and Lovibond (1995)approach of determining the prevalence of depression, anxiety and stress using DASS 42 item questionnaires.

To determine the prevalence of DAS among the sample respondents, the researcher identified the score of depression, anxiety and stress separately as per the items listed above. Then, coring the respondents' response over each of the sub-scales, then evaluated as per the severity-rating index of DASS scoring stated below.

Table 3.1 DASS Severity Rating Index

Severity level	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Sever	21-27	15-19	26-33
Extremely sever	28+	20+	34+

Source:Lovibond and Lovibond (1995)

To address the second objectives of the thesis (to assess the prevalence of depression, anxiety and stress across different years of study among medical college students in the study area), one way analysis of variance (ANNOVA) was employed.

To address the third objective of this thesis (i.e to examine the relationship between depression, anxiety and stress, and academic achievements of medical college students), Pearson ch-square test was applied. This is because chi-square test helps to see the association between depression, anxiety and stress, and students' academic achievements.

Study Variables:

Independent Variables

Medical students' academic achievement (CGPA)

The dependent Variables

Depression, Anxiety and Stress score

3.8Data Quality Assurance

To assure the data quality more emphasis was given in designing data collection instrument. For its simplicity the questionnaire was pre-tested on 30 randomly selected students who are not included in the main studies followed by modification &its reliability was 0.71. As a self-administered questionnaire, it can be designed to be answered easily. Proper instruction was given before the survey as to the importance of the study for the study subjects, the data collectors as well as the supervisors. The collected data has been reviewed and checked for completeness before data entry thereby the incomplete data has been discarded.

3.9Ethical Considerations

Before collecting the required data from the study subjects, getting informed consent is indispensible. To do so, the researcher took letter from AAU, school of psychology, college of education and behavioral studies. Then, this letter was given to the head of the college to get permission and support. Side by side, after the selection of study subjects, the basic intent of the

study was clearly explained for the respondents to get verbal consent. By doing so, before the actual data collection from respondents, informed consent had been obtained from the selected students. It was also told to the participants that the whole process of questionnaire administration was set up with great secrecy and used only for academic purpose. The participants also informed to respond freely without any obligation or enforcement and they can interrupt whenever they do not want to fill the questionnaire. In addition, the researcher told to the respondents in which their name and behavior never mentioned forever.

CHAPTER FOUR

RESULTS OF THE STUDY

4.1. Introduction

This section starts with the provision and synthesis of information related to the prevalence of medical students' depression, stress and anxiety, their academic achievements, and the relationship between depression, anxiety and stress with academic achievements. Then, data analysis and interpretation of the information related to psychological disorders and academic performance of medical students were carried on in brief and precise manner using DASS 42 questions.

4.2 Background Characteristics of Respondents

The survey has collected a wide range of information which is essential to the interpretation of the findings and understanding of the results of the effect of psychological disorders on students' academic performance at St. Paul's Hospital Millennium Medical College (SPHMMC),Hence, in this section, the researcher tried to present the socio- economic and demographic characteristics of respondents, and their parents in relation to the psychological disorder using percentages.

The analysis of the survey data showed that 61.6 % and 38.4% of respondents were male and female students, respectively. Out of the total sample respondents, 61.2%) were of town background and 38.8 % were of rural or out of town background.

In terms of religious denominations, the majority of the respondents were Orthodox Christians (57.6%) followed by Muslims (24.6%). Significant proportion of respondents (14.1 %) reported that they are followers of protestant and only 2.5 % of the respondents acknowledged that their religion is catholic.

Out of 276 sample medical students, 86.6% reported that they got money from their relatives or anybody else per month whereas only 13.4 % of students reported that they did not get money per month permanently. This implies that medical students invest not only their time energy on education but also their parents or relatives money. However, the amounts of money they invest differ as the background of their parents. In this regard, the survey data revealed that majority (63 %) of the respondents reported that they got 501 birr per month. Nearly one-third (29.3 %) and 7.6 % of the students said that they got 501- 1000 birr and greater than 1000 birr per month. This indicated that as most of the Ethiopian parents have not adequate resource they invest few on the academic achievement of their children.

With regard to marital status, 265 students (96%) were single. Four students (1.4%) and 5 students (1.5%) were married and separated from their spouse, respectively. This implies that as the target population was a college students', most of them are single.

Table 4.1 Percentage Distributions of Respondents Demographic characteristics .

Characteristics	Male (No. 170)		Female (No. 106)		Total (No. 276)	
	No.	%	No.	%	No.	%
Religion						
Orthodox	96	34.8	63	22.8	159	57.6
Islam	37	13.4	31	11.2	68	24.6
Protestant	28	10.1	11	4	39	14.1
Catholic	6	2.2	1	0.4	7	2.5
Others	3	1.1	0	0	3	1.1
Childhood Residence						
Rural (out of town)	107	38.8	62	22.5	169	61.2
Town	63	22.8	44	15.9	107	38.8
Years of study						
1st year	33	12	22	8	55	20
2nd year	40	14.5	21	7.6	61	22.1
3rd year	36	13	9	3.3	45	16.3
4th year	28	10.1	9	3.3	37	13.4
5th year	25	9.1	24	8.7	49	17.8
6th year	8	2.9	21	7.6	29	10.5
Did you get money per month?						
Yes	151	54.7	88	31.9	239	86.6
No	19	6.9	18	6.5	37	13.4
Amount of Money/month						
<=500	112	40.5	62	22.5	174	63
500-1000	50	18.1	31	11.2	81	29.3
>1000	8	2.9	13	4.7	21	7.6
Parents' status						
Both are a live	149	54	95	34.4	244	88.4
Father Alive	9	3.3	1	0.4	10	3.6
Mother Alive	12	4.3	7	2.5	19	16.5
Neither Alive	0	0	3	1.1	3	1.1
Parents marital status						
Currently married	134	48.6	87	31.5	221	80.1

Divorced	14	5.1	10	3.6	24	8.7
Separated	5	1.8	1	0.4	6	2.2
Widowed	17	6.2	8	2.9	25	9.1
Father occupation						
Farmer	42	15.2	18	6.5	60	21.7
Merchant	74	26.8	42	15.2	116	42
Government employee	30	10.9	20	7.2	50	18.1
Private employee	17	6.3	23	8.3	40	14.5
Pensioners	2	0.7	0	0	2	0.7
Day laborer	3	1.7	2	1.1	5	1.8
Others	2	0.7	1	0.4	3	1.1
Mother occupation						
house wife	87	31.5	47	17	134	48.6
Farmer	47	17	34	12.3	81	29.3
Merchant	30	10.9	17	6.2	47	17
Government employee	5	1.8	7	2.5	12	4.3
Others	1	0.4	1	0.4	2	0.8
Father education						
Illiterate	16	5.8	7	2.5	25	8.3
Read and write	31	11.2	17	6.2	48	17.4
Primary	17	6.2	9	33	26	9.4
Secondary	13	4.7	10	3.6	23	8.3
Certificate/diploma	15	5.4	11	4	26	9.4
Above Diploma	78	28.3	52	18.6	130	47.1
Mother education						
Illiterate	40	14.5	21	7.6	61	22.1
Read and write	37	13.4	10	3.6	47	17
Primary	11	4	11	4	22	8
Secondary	9	3.3	16	5.8	25	9.1
Certificate or diploma	24	8.7	11	4	35	12.7
Above Diploma	49	17.8	37	13.4	86	31.2

Source: Survey data, 2018

4.3. Socio-Demographic Features of Respondents' Parents

The socio-economic statuses of parents have tremendous importance on the overall success as well as entire life of students. Previous studies acknowledged that students who came from relatively better off parents would have in a good position to solve psychological problems (depression, anxiety and stress) than their counter parts. Cognizant (aware) of this fact, in this sub-section, an attempt was made to assess the socio-economic status of sample students.

As it can be displayed in Table 4.2, the findings of this study reveal that from the total respondents (276 students),88.4 % of the them (244 students), 3.7 % (10 students), 6.9 %(19students) and 1.1 % (3 students) were reported that both their father and mother are alive, father alive, mother alive and neither of them are alive respectively. In the same fashion, from the total sample students, 80.1% of the them (221 students), 8.7 % (24 students), 2.2 percent (6students) and 8.1 % (25 students) were reported that they had currently married, divorced, separated and widowed/widower parents, respectively. This implies that the majority of students have currently married and a live parents which might have great contribution to students' academic performance as well as psychological makeup.

Regarding parents level of education, the findings of the study revealed that, from the sample respondents (276), 23students (8.3%), 48students (17.4%), 26 students (9.4 %), 23 students (8.3 %),26 students (9.4 %), and 130 students (47.1%) respondents reported that their fathers' educational level were illiterate, able to read and write, primary, secondary, certificate or diploma holders and above diploma holder, respectively.

Information on the educational status of respondents' mother indicated that, 22.1 % (61students), 17 % (47 students), 8 % (22 students), 9.1 %(25students),12.7 %(35) and 31.2 % (86 students) of respondents reported that their mother was illiterate, able to read and write, primary, secondary certificate/diploma holder and above diploma educational level, respectively.

As it can be seen in Table 4.2, the analysis of fathers' occupation displayed that 21.7 % (60 students), 42% (116students), 18.1% (50students), 14.5% (40students) and 1.5 percent (5 students) acknowledged that their father occupation were farmers, merchant, government employees, private employees and day laborer, respectively**.** This clearly showed that the majority of medical students' father engaged in trading which might have a capacity to invest their money on their children while they were in primary and secondary school.

Similarly, occupational status of respondents' mother indicated that, 48.6% (134 students), 29.3 % (81students), 17 % (47 students), 4.3 % (12students), and 0.8 % (2 students) of respondents reported that their mothers' occupation was housewife, farmer, merchant, government employee and private employee, respectively. This implies that as most of Ethiopian mothers are housewife, the majority of respondents' mothers are house made.

4.4. Prevalence of Depression, Anxiety and Stress (DAS) among Medical Students

As it is clearly explained in the methodological section of this thesis, the prevalence and severity level of DAS was scored based on the manual for the depression anxiety stress scales first prepared by Lovibond and Lovibond (1995)and later used or adopted by a number of contemporary researchers (Manjunath et al., 2013;Iqbal et al., 2015; Khan et al.,2017;Kunwar et al., 2016) and Roy et al.,2015).

As it can be seen in Table 4.3, the findings of this study showed that, among the total sample respondents (276 students), 52.5% (145 students) acknowledged that they did not have depression problem during the survey period. Likewise, 38.8% (107students) and 63.4% (175 students) were reported that they did not have anxiety and stress problem, respectively. This implies that sample medical students in the study area are more suffered by anxiety and depression than stress.

Table 4.3 Prevalence of Depression, Anxiety and Stress with Different Degrees of Severity among the Sample Students

Severity Level	Depression		Anxiety		Stress	
	Number	Percent	Number	Percent	Number	Percent
Normal	145	52.5	107	38.8	175	63.4
Mild	63	22.8	41	14.9	46	16.7
Moderate	55	20	76	27.5	42	15.2
Sever	9	3.3	32	11.6	13	4.7
Extremely Sever	4	1.4	20	7.2	0	0

Source: Survey Data, 2018

According to DASS 42, the overall prevalence of depression, anxiety and stress among the respondents was 47 .5%, 61.2% and 36.6%, respectively**.** This implies that high prevalence of depression, anxiety and stress among the study medical students during the surveyed period. This might be because of the heavy course load, aspiration to score better grade and absence of adequate counseling service. However, the prevalence as well as the severity of these psychological disorders may vary according to respondents' socio-demographic characteristics.

As shown in Table 4.4, the cross tabulation of depression score with gender of the respondents revealed that, among male respondents, 51.8% boys and from female resopndents,53.8% of girls did not have any depression problem during the survey period. However, 24.7%, 20.6% and 2.9% of male respondents were found to be mildly, moderately and severely depressed during the survey period, respectively. Similarly, 19.8%, 18.9% and 3.8% of female respondents were found to be mildly, moderately and severely depressed during the survey period, respectively

The findings of the study showed that, 58% of respondents whose age was less than 20 years,45.4% of respondents whose age was between 20 and 25years, and 37.5% of the sample students whose age was above 25 years had depression problem under varies level of Severity.
In terms of former place of residence, the analysis of the study depicted that among those respondents who came from town, 60.9% of them did not have depression problem whereas

18.3%,16.6%,3% and 1.2% of them had mildly, moderately, severely and too severely depressed, respectively during the survey period. On the same vein, among those respondents who came from rural area, 39.3% of them did not have depression problem whereas 29.9%, 25.5%,3.7% and 1.9% of them had mildly, moderately, severely and too severely depressed, respectively during the survey time.

With regard to the amount of money per month students got, the above table showed that 44.3%, 69.9% and 61.9% of students who got 500birr and less, between 501-100birr and greater that 1000birr per month reported that they did not have any depression problem during the survey period.

Table 4.4 Respondents' Depression Score against Selected Socio-demographic characteristics

	Gender		Age Group			Childhood residence		Money per month		
Depression Score	Male	Female	<20 years	20-25years	>25 years	Town	Rural	<=500 birr	501-1000	>1000
Normal	51.8	53.8	42	54.6	62.5	60.9	39.3	44.3	69.9	61.9
Mild	24.7	19.8	32	20.2	37.5	18.3	29.9	28.2	12.3	19
Moderate	20.6	19.8	22	20.2	0	16.6	25.2	23.6	12.3	19
Sever	2.9	3.8	4	3.2	0	3	3.7	5	4	0
Extremely Sever	0	5.8	0	1.8	0	1.2	1.9	2	2	0
Total	100	100	100	100	100	100	100	100	100	100

Source: Own Survey, 2018

As the analysis show of anxiety score across gender of the respondents demonstrated that, among male respondents, 38.8% boys and from female resopndents,38.7% of girls did not have any depression problem during the survey period. However, 14.7%, 27.6% 12.4%and 6.5% of male respondents were found to be mildly, moderately severely and too anxious during the survey period, respectively. Similarly, 15.1%, 27.4% and 10.4% and 8.5 % of female respondents were found to be mildly, moderately severely and very severely anxious during the survey period, respectively.

The analysis of the study also depicted that, 36% of respondents whose age was less than 20 years, 61% of respondents whose age was between 20 and 25years, and 37.5% of the sample students whose age was above 25 years had anxiety problem under varies level of Severity.
In terms of former place of residence, the analysis of the study confirmed that among those respondents who came from town, 43.8% of them did not have depression problem whereas 17.8%, 23.1%, 8.3% and 4.1% of them had mildly, moderately, severely and too severely anxious, respectively during the survey period. Likewise, among those respondents who came from rural area, 30.8% of them did not have depression problem whereas 10.3%, 34.6%,16.8% and 7.5% of them had mildly, moderately, severely and too severely depressed, respectively during the survey time.

With regard to the amount of money per month students got, the above table showed that 35.1%, 44.4% and 47.6% of students who got 500birr and less, between 501-100birr and greater that 1000birr per month reported that they did not have any anxiety problem during the survey period.

Table 4.5 Respondents' Anxiety Score against Selected Socio-demographic characteristics

Anxiety Score	Gender		Age Group			Childhood residence		Money per month		
	Male	Female	<20 years	20-25years	>25 years	Town	Rural	<=500 birr	501-1000	>1000
Normal	38.8	38.7	34	39	62.5	43.8	30.8	35.1	44.4	47.6
Mild	14.7	15.1	12	15.6	12.5	17.8	10.3	12.6	18.5	19
Moderate	27.6	27.4	40	25.7	0	23.1	34.6	31	18.5	33.3
Sever	12.4	10.4	10	12.4	0	8.3	16.5	12.1	13.6	0
Extremely Sever	6.5	8.5	4	7.3	25	4.1	7.5	9.6	4.9	0
Total	100	100	100	100	100	100	100	100	100	100

Source: Own Survey, 2018

As it can be seen in Table 4.5, the analysis of anxiety score across gender of the respondents demonstrated that, among male respondents, 38.8% boys and from female resopndents,38.7% of girls did not have any depression problem during the survey period. However, 14.7%, 27.6% 12.4%and 6.5% of male respondents were found to be mildly, moderately severely and too anxious during the survey period, respectively. Similarly, 15.1%, 27.4% and 10.4% and 8.5 % of female respondents were found to be mildly, moderately severely and very severely anxious during the survey period, respectively.

Table 4.6 Respondents' Stress Score against Selected Socio-demographic characteristics

Stress Score	Gender		Age Group			Childhood residence		Money per month		
	Male	Female	<20 years	20-25years	>25 years	Town	Rural	<=500 birr	501-1000	>1000
Normal	62.9	64.2	66	63.3	50	71.6	50.5	55.7	74.1	85.7
Mild	17.1	16	12	16.5	50	10.1	27.1	23	3.7	14.3
Moderate	15.3	15.1	22	14.2	0	14.2	16.8	16.1	17.3	0
Sever	4.7	5	0	6	0	4.1	5.6	5.2	4.9	0
Extremely Sever	0	0	0	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100

Source: Own Survey, 2018

The cross tabulation of stress score with gender of the respondents, as depicted in table 4.6,displayed that, among male respondents, 62.9% boys and from female resopndents,64.2% of girls did not have any stress problem during the survey period. However, 17.1%, 15.3% and 4.7% of male respondents were found to be mildly, moderately and severely stressed during the survey period, respectively. Correspondingly, 16%, 15.1% and 5% of female respondents were found to be mildly, moderately and severely stressed during the survey period, respectively

The findings of the study showed that, 55.7% of respondents whose age was less than 20 years,74.9% of respondents whose age was between 20 and 25years, and 85.7% of the sample students whose age was above 25 years had reported that they did not have any stress problem during the survey period.

In terms of former place of residence, the analysis of the study depicted that among those respondents who came from town, 71.6% of them did not have depression problem whereas

10.1%,14.2%and 4.1% of them had mildly, moderately and severely stressed, respectively during the survey period. On the same line, among those respondents who came from rural area, 50.5% of them did not have depression problem whereas 27.1%, 16.8% and 5.6% of them had mildly, moderately and severely stressed respectively during the survey time.

With regard to the amount of money per month students got, the above table showed that 44.3%, 25.9% and 14.3% of students who got 500birr and less, between 501-100birr and greater that 1000birr per month acknowledged that they had stressed problem at varies severity level during the survey period.

4.5. Depression, Anxiety and Stress among Different Years of study

The researcher used analysis of variance (ANOVA) to test the association between year of study and depression, anxiety, and stress.

Table 4.7 Respondents' DAS Prevalence against Years of Study

Years of study	Depression				Anxiety				Stress			
	Mean	SD	F-value	p-value	Mean	SD	F-value	p-value	Mean	SD	F-value	p-value
First year	10.18	6.3	5.4	.000	10.6	5.4	7.3	.000	11.9	6.5	4.7	.000
Second	12.2	8.3			13.1	6.5			14.7	6.9		
Third	9.6	6.1			10.7	7.3			13.2	9.3		
Fourth	6	5.2			6.7	4.1			8.4	6.5		
Fifth year	7.3	5.5			7.8	5.4			10.6	5.8		
Six years	8.6	7.3			7.8	6.6			11.9	7.0		

Source: Own Survey, 2018

Prior researchers confirmed that the prevalence of depression, anxiety and stress among students differ in years of study. In this study, one way analysis of variance shows that statistically significant mean difference was observed between depression, anxiety and stress among students, their years of study.

4.5.1 Depression against Years of Study

As shown in Table 4.3 above and figure 4.1, the prevalence of depression was found to be high in 1st and 2nd year**,** then decreases in 3rd and 4th year medical students. However, depression level became increases among 5th and 6th year medical students. Analysis of variance confirmed that statistically significant mean difference was observed between depression among students and their years of study (F= 5.4; P<0.01). This might be because being new for the environment and tension among 1st and 2nd year students, and course load and practical attachment among 5th and 6th year medical students.

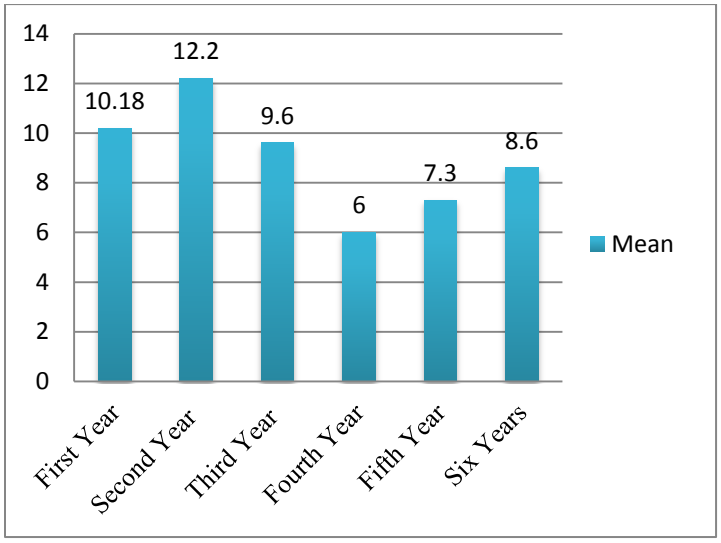


Fig.4.1 Relationship between Depression and Years of Study

4.4.1 Anxiety against Years of Study

As depression, anxiety also varies among students in different years of study. As seen in Table 4.4, one-way analysis of variance (ANNOVA) clearly showed that statistically significant mean difference was observed between prevalence of anxiety and students' years of study (F= 7.3; P<0.01).

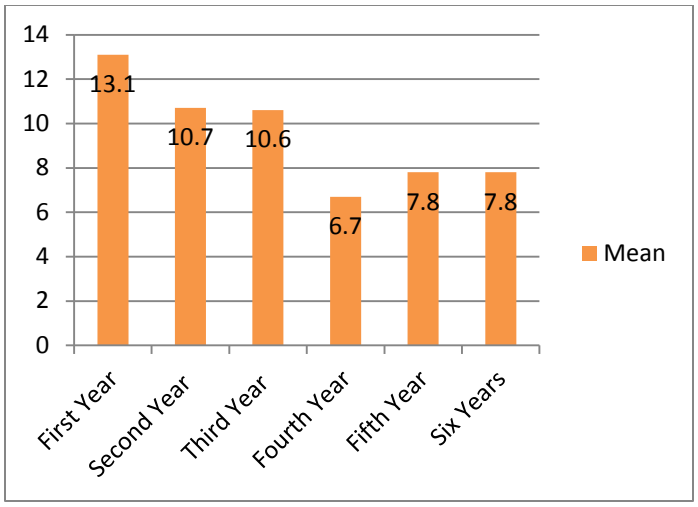


Fig.4.2 Relationship between Anxiety and Years of Study

Fig. 4.2 showed that mean anxiety score were found to be high in first (13.1), second (10.7) and third (10.6) year students and became decline among fourth year (6.7) students. The mean anxiety score of fifth and six year students were found to be the same. This might be because being new for the environment and tension among 1st, 2ndand 3rdyear students, and course load and practical attachment among 5th and 6th year medical students. A similar finding was reported by Mohamed *et al.* (2016) on their study of depression, anxiety, and stress in Sudanese medical students. Their findings confirmed that the mean score of anxiety among 2nd , 3rd ,4th ,5th and 6th year sample students was 11.0, 9.73, 8.35,6.07 and10.15, respectively.

4.4.2 Stress against Years of Study

It is obvious that stress has occurred in all people though differ in intensity and severity and intensity.

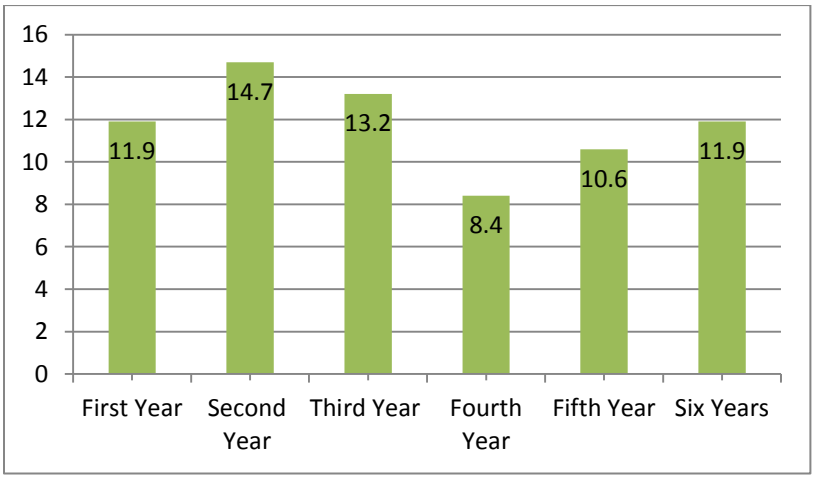


Fig.4.3 Relationship between Stress and Years of Study

Previous research findings confirmed that stress also varies among students in different years of study. As seen in Table 4.4, one-way analysis of variance (ANNOVA) clearly depicted that statistically significant mean difference was observed between mean score of stress and students' years of study (F= 4.7; P<0.00).

The analysis of the survey data revealed that (fig.4.3) mean stress score was too high among 2nd (14.75), 3rd (13.18),5th (10.6) and 6th (11.95) year medical students. This might be attributed to the excessive course load imposed on second and third year students while practical attachments coupled with live education given to fifth and six year students. A study by Mohamed et al. (2016) in Sudan confirmed that the mean score of anxiety among 2nd , 3rd ,4th ,5th and 6th year sample students was 10.09, , 17.55, 15.87, 14.26 and15.69, respectively.

4.5 Severity Levels of Depression, Anxiety and Stress among Medical Students

It is possible to argue that not all medical students suffered equally by psychological problems like depression, anxiety and stress. In this regard, as shown in Table 4.3 above, among131 students (47.5%) who had depression problem, 22.8%,20%, 3.3% and 1.4% of respondents had under mildly, moderately, severely and extremely severe depression, respectively. In the same way, from 169 students (61.2%) who had anxiety problem, 14.9%, 27.5%, 11.6% and 7.2% of respondents had mildly, moderately, severely and extremely severe anxious, respectively.

Table 4.3 above also shows that, among101 students (36.6%) who had stress problem, 16.7%, 15.2%, and 4.7% of respondents had under mildly, moderately, and severe stressed, respectively during the survey period.

4.6. Prevalence of DAS and Academic Achievements of Respondents

In this sub section an attempt was made to examine the relationship between the prevalence of DAS and academic achievements of medical students using person chi-square test.

4.6.1 Severity Level of Depression against Academic achievement

It is obvious that depression among students might have significant impact on their academic performance. However, the impact varies according to the level of severity of depression. In this sub-section an attempt was made to see the association between severity level of depression and students achievement.

Table 4.8Cross Tabulation of Depression Score and Students' Academic Achievement

		Academic Achievement									
		Satisfactory		Good		Very Good		Excellent		Chi-square	P-value
Depression Score		No.	%	No.	%	No.	%	No.	%		
	Normal	20	42.6	71	56.3	23	52.4	21	52.5	14.2	0.291
	Mild	11	23.4	25	19.8	19	30.2	8	20		
	Moderate	15	31.9	21	16.7	9	14.3	10	25		
	Sever	1	2.1	5	4	2	3.2	1	2.5		
	Extremely Sever	0	0	4	3.2	0	0	0	0		
	Total	47	100	126		63	100	40	100		

Source: Own Survey, 2018

As shown in Table 4.8, though the chi-square test revealed that no statistically significant association observed between the severity level of depression and students' academic achievement, 57.4% of the students who have depression problem with various level of severity were found to be under "satisfactory" academic achievement group.

Surprisingly, thorough analysis of the cross tabulation of severity level of depression and students' academic achievement disclosed that no one of students who have extremely depression problem were in "very good and excellent academic achievement" during the survey period. This indicated that as depression level of students become very severe, some sort of influence on the academic achievement of students though statistically hidden in this research.

4.6.2 Severity Level of Anxiety against Academic Achievement

Previous researcher like Sindhu and Basha (2017) confirmed that anxiety has statistically significant impact on the academic performance of students in which low achiever students scored high in anxiety score than high achiever students. On the same line, the researcher of the present study tried to see the association between anxiety score and students' academic achievement and found that there was a statistically significant association between levels of

anxiety and students' academic achievement at less than 0.05 significant level (X^2=20.02,p<0.05).

Table 4.9Cross Tabulation of Anxiety Score and Students' Academic Achievement

		Academic Achievement									
		Satisfactory		Good		Very Good		Excellent		Chi-square	P-value
		No.	%	No.	%	No.	%	No.	%		
Anxiety Score	Normal	11	23.4	54	42.9	21	35.3	21	52.5	20.02	0.049
	Mild	8	17	14	11.1	14	22.2	5	12.5		
	Moderate	17	36.2	29	23	21	33.3	9	22.5		
	Sever	5	10.6	18	14.3	6	9.5	3	7.5		
	Extremely Sever	6	12.8	11	8.7	1	1.6	2	5		
	Total	47	100	226	100	63	100	40	100		

Source: Own Survey, 2018

As shown in Table 4.6, among 40 students who have "excellent" academic performance, 22.5%, 33.3%, 9.5% and 1.6% of them were found to be in mild, moderate, sever and extremely sever anxiety problem, respectively. Likewise, among 63 students who have "very good" academic performance, 12.5%, 22.5%, 7.5% and 5% of them were found to be under mild, moderate, sever and extremely sever anxiety problem, respectively.

The findings of the study also showed that, from 226 students who have " good" academic performance, 11.%, 23%, 14.3% and 8.7% of them were under mild, moderate, sever and extremely sever anxiety problem, respectively. In addition, from 47 students who have "satisfactory" academic performance, 17%, 36.2%, 10.6% and 12.8% of them were under mild, moderate, sever and extremely sever anxiety problem, respectively

4.6.3 Severity Level of Stress against Academic achievement

Stress was found to be part of students' life and could give impact on how students cope with the demands of academic life. Students reported experiencing academic stress at predictable times each semester with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time. Therefore, in this sub-section an effort was made to look in to the association between severity level of stress and students' academic achievement.

Table 4.10Cross Tabulation of Stress Score and Students' Academic Achievement

		Academic Achievement								Chi-square	P-value
		Satisfactory		Good		Very Good		Excellent			
		No.	%	No.	%	No.	%	No.	%		
Stress Score	Normal	29	61.7	81	64.3	39	61.9	26	65.0	7.7	0.568
	Mild	8	17	18	14.3	13	20.6	7	17.5		
	Moderate	9	19.1	17	13.5	9	14.3	7	17.5		
	Sever	1	2.1	10	7.9	2	3.2	0	0		
	Extremely Sever	0	0	0	0	0	0	0	0		
	Total	47	100	126	100	63	100	40	100		

Source: Own Survey, 2018

As shown in Table 4.7, though the chi-square test revealed that statistically significant association was not observed between the severity levels of stress and students' academic achievement, from 47 students who have "satisfactory" academic performance, 8%, 9% and 1% of them were under mild, moderate and sever stress problem, respectively; among 126 students who have "good" academic performance, 14.3%, 13.5% and 7.9% of them were under mild, moderate and sever stress problem, respectively.

Interestingly, the analysis of the cross tabulation of level of stress score and students' academic achievement demonstrated that students who have in different academic achievement reported that they did not have any extremely sever stress problem during the survey period.

CHAPTER FIVE

5 DISCUSSIONS

5.1 Introduction

In this chapter an attempt was made to discuss the main findings of the study related to the previous research findings in brief and concise manner. The overall interpretations of the major findings of the study and the possible reasons why the existing findings are so also treated in this chapter.

5.2 Findings of the Study

The study found that 61.6 % and 38.4% of respondents were male and female students, respectively. This might be because the tolerance of heavy course load and joining medicine in favor of male than female. A similar finding was reported by Salem et al. (2016). Similarly, out of the total sample respondents, 61.2% were of town background and 38.8 % were of rural or out of town background. This could be because of child hood orientation, relatively good parenting style and accessibility to teaching aids in favor of town background respondents that their counter parts. A similar result was reported by Mohammed (2016); Ahmed etal. (2016).

In terms of years of study with the prevalence of DAS among medical students, the study found that the prevalence of depression was found to be high in 1^{st} and 2^{nd} year**,** then decreases in 3^{rd} and 4^{th} year medical students. However, depression level became increases among 5^{th} and 6^{th} year medical students. Analysis of variance confirmed that statistically significant mean difference was observed between depression among students and their years of study ($F= 5.4$; $P<0.01$).The possible reason may be at the first and second years of study students are new to the environment and the course. Relatively they adapt the situation in third and fourth years of study, then increased their depression score during their fifth and six years of study may be due to practical attachment and heavy course load.

Similar findings were reported by previous researcher. For example, Ghada et al., (2016) on their study of Prevalence and Predictors of Depression, Anxiety and Stress among Zagazig University

Students, Egypt reported that 40%, 45%, 33.6% of their sample respondents were found to be depressed, anxious and stressed, respectively. Kulsoom and Afser (2015) in their study of stress, anxiety, and depression using DASS 21 questionnaires among medical students in a multiethnic setting in Saudi Arabia displayed that the prevalence of depression, anxiety, and stress were 43%, 63% and 41%, respectively. A study by Kumar *et al.,(*2016) in India on Depression, anxiety and stress levels among medical students revealed that 37.3%,50.6% and 32.8% of the study subjects were found to be in depression, anxiety and stress, respectively.

However, less prevalence of depression, anxiety and stress (29.9%, 41.1% and 27%, respectively) was reported by Kunwar *et al.*, (2016) in their study on depression, anxiety and stress among medical students in Nepal. Moreover, Anwar *et al.* (2016) study among dermatology patients in Saudi Arabia showed that 12.6%,22.1% and 7.5 % of their study subjects were under depression, anxiety and stress, respectively.

In addition, a similar finding was reported by Iqbal et al. (2015); Naveen et al. (2015), and Modi and Kumar (2015).

The study also found that mean anxiety score were found to be high in first (13.1%), second (10.7%) and third (10.6%) year students and became decline among fourth year (6.7%) students. The mean anxiety score of fifth and six year students were found to be the same. These might be because in ability to adapt the new environment, curriculum and way of teaching. Naveen et al. (2015) supported this finding in their study on stress, anxiety and depression among selected engineering and medical students in Bangalor.

The study revealed that the mean stress score was too high among 2^{nd} (14.75), 3^{rd} (13.18),5^{th} (10.6) and 6^{th} (11.95) year medical students and the difference were statistically significant at less than 0.01 level of significant. These might be because heavy course load in favor of second and third year students, and practical attachment in fifth and six year students. This findings was supported by Naveen *et al.* (2015).

The study found that the overall prevalence of depression, anxiety and stress among the respondents were 47 .5%, 61.2% and 36.6%, respectively using the standard DAS 42 questionnaire. This implies that by any standard the severity level of DAS among sample respondents showed high or at risk condition. This might be attributed to awareness problem, the general low standard of living as well as lack of persistent and adequate counseling services.

A similar result was reported by Farwa *et al.,* (2015) in their study on prevalence of depression, anxiety and stress (by DASS Scoring System) among medical students in Islamabad, Pakistan showed that among their study subjects, 29.9% of them had no anxiety, 12.9% were mildly anxious, 25.7% were moderately anxious, 18.6% were severely anxious, 12.9% had extremely severe anxiety. 52.9% students did not have stress, 17.1% were mildly stressed, 22.9% were moderately stressed, and 7.1% were under severe stress. Furthermore, Mostafa *et al.* (2017) on their study of assessment of depression, anxiety and stress among first year students of public medical college, Bangladesh revealed that 9.5%, 24.8%, 5.7% and14.3 % of students were under mildly, moderately, severely and extremely severe depression, respectively; 13.3%, 24.8%, 8.6% and18.1 % of students were under mildly, moderately, severely and extremely severe anxiety, and 18.1%, 19%, 17.1% and4.8% of students were mildly, moderately, severely and extremely severe stressed, respectively.

In addition, The finding of the present study was supported by Iqbal *et al.* (2015); Naveen *et al.* (2015); Mohamed *et al.* (2016); Rizvi et al. (2015); Salem et al. (2016); Basundan et al. (2017). To the contrary,(oppose) in the study of Ahmed et al. (2015) found that the prevalence of depression, anxiety and stress was found to be 12.6%, 22.1% and 7.5% which was too low comparing to the previous findings.

The study found that prevalence of DAS and academic achievements' of medical students found that there was a statistically significant association between levels of anxiety and students' academic achievement at less than 0.05 significant level. This indicated that as the level of students' anxiety become high, the academic performance of students give rise to low. A similar study was reported by prior researchers like Sindihu and Basha (2017); Sharma and Pandey

5.3. SAMMARY,CONCLUSIONS AND RECOMMENDATIONS

5.3.1. Introduction

In this chapter, based on the objective of the study, a Summary conclusion of the research findings that have been discussed and analyzed in detail in the previous chapters is briefly presented. In addition, general conclusions that are highly related with the research objectives are presented as well. Then, based on the major findings and conclusions of the study, possible recommendations are forwarded.

5.3.2. Summary

The result show that 61.6 % and 38.4% of respondents were male and female students, respectively. This might be because the tolerance of heavy course load and joining medicine in favor of male than female. A similar finding was reported by Salem et al. (2016). Similarly, out of the total sample respondents, 61.2% were of town background and 38.8 % were of rural or out of town background. This could be because of child hood orientation, relatively good parenting style and accessibility to teaching aids in favor of town background respondents that their counter parts. A similar result was reported by Mohammed (2016); Ahmed etal. (2016).

In terms of years of study with the prevalence of DAS among medical students, the study found that the prevalence of depression was found to be high in 1^{st} and 2^{nd} year**,** then decreases in 3^{rd} and 4^{th} year medical students. However, depression level became increases among 5^{th} and 6^{th} year medical students. Analysis of variance confirmed that statistically significant mean difference was observed between depression among students and their years of study ($F= 5.4$; $P<0.01$).The possible reason may be at the first and second years of study students are new to the environment and the course. Relatively they adapt the situation in third and fourth years of study, then increased their depression score during their fifth and six years of study may be due to practical attachment and heavy course load.

5.4. Conclusions

The main objective of this thesis was to assess the association between medical students' depression, anxiety and stress problems and their academic performance at Saint Paul Hospital Millennium Medical College (SPHMMC) in Addis Ababa, Ethiopia. To achieve this objective, survey research design and stratified random sampling techniques were adopted.

The study found that 61.6 % and 38.4% of respondents were male and female students, respectively. Out of the total sample respondents, 169respondents (61.2 percent) were of town background and 107 respondents (38.8 percent) were of rural or out of town background. In terms of religious denominations, the majority of the respondents were Orthodox (57.6 percent) followed by Muslims (24.6 percent) and protestant (14.4 percent). Out of 276 sample medical students, 239 students (86.6 percent) reported that they got money from their relatives or anybody else per month whereas only37 students (13.4 percent) of students reported that they did not get money per month permanently.

The findings of the study showed that from the sample respondents (276), 23 students (8.3 percent), 48students (17.4percent), 26 students (9.4 percent), 23 students (8.3 percent), 26 students (9.4 percent), and 130 students (47.1 percent) respondents reported that their fathers' educational level were illiterate, able to read and write, primary, secondary, certificate or diploma holders and above diploma holder, respectively. Similarly, 22.1 percent (61students), 17 percent (47 students), 8 percent (22 students), 9.1 percent (25students),12.7 percent(35) and 31.2 percent (86 students) of respondents reported that their mother was illiterate, able to read and write, primary, secondary certificate/diploma holder and above diploma educational level, respectively.

It was found out that among the total sample respondents, 52.5% (145 students) of the respondents acknowledged that they did not have depression problem during the survey period. Likewise, from the total sample students, 38.8% (107students) and 63.4% (175 students) of the

sample respondents were reported that they did not have anxiety and stress problem during the survey period, respectively.

The study also found that the overall prevalence of depression, anxiety and stress among the respondents were 47.5%, 61.2% and 36.6%, respectively using the standard DAS 42 questionnaire. In addition, based on the logic not all medical students suffered equally by psychological problems; the study found that among131 students (47.5%) who had depression problem, 22.8%, 20%, 3.3% and 1.4% of respondents had under mildly, moderately, severely and extremely severe depression, respectively and from 169 students (61.2%) who had anxiety problem, 14.9%, 27.5%, 11.6% and 7.2% of respondents had mildly, moderately, severely and extremely severe anxious, respectively. Similarly, among101 students (36.6%) who had stress problem, 16.7%, 15.2%, and 4.7% of respondents had under mildly, moderately, and severe stressed, respectively.

Regarding the prevalence of depression, anxiety and stress among different years of study, the study found that the prevalence of depression was found to be high in 1^{st} and 2^{nd} year**,** then decreases in 3^{rd} and 4^{th} year medical students. However, depression level became increases among 5^{th} and 6^{th} year medical students. Analysis of variance confirmed that statistically significant mean difference was observed between depression among students and their years of study ($F= 5.4$; $P<0.00$).Likewise, mean anxiety score were found to be high in first (13.1%), second (10.7%) and third (10.6%) year students and became decline among fourth year (6.7%) students. The mean anxiety score of fifth and six year students were found to be the same; however, the mean stress score was too high among 2^{nd} (14.75), 3^{rd} (13.18),5^{th} (10.6) and 6^{th} (11.95) year medical students and the difference was statistically significant at less than 0.01 level of significant.

Chi-square test analyses of the association between prevalence of DAS and academic achievements' of medical students found that there was a statistically significant association between levels of anxiety and students' academic achievement at less than 0.05 significant level

(X^2=20.02,p<0.05). This indicated that as the level of students' anxiety become high, the academic performance of students give rise to low. However, statistically significant associations were not observed between level of depression and stress with academic achievements' of medical students in the study site during the survey period.

5.5. Recommendations

Based on the findings of the study and the conclusions remarks, the following recommendations are forwarded:-

1. Since, from the total sample students, 38.8% and 63.4% of the sample respondents were reported that they did not have anxiety and stress problem during the survey period, respectively, the stakeholders had better be in a better condition of advising the students to keep it up their psychological make-up and activities.

2. The overall prevalence of depression, anxiety and stress among the respondents were 47.5%, 61.2% and 36.6%, respectively using the standard DAS 42 questionnaire. These figures are too high by any standards. So, to mitigate the problem, the stakeholders including health professionals would better give awareness about the overall problems accompanied by depression, anxiety and stress.

3. Significant number of sample respondents had depression, anxiety and stress problem with varies level of severity (i.e mild, moderate, sever and extremely severe. Education based interventions seem to be sound in more comprehensive and systematic manner by educational planners and curriculum designers.
4. Since this study found statistically significant association between levels of anxiety and students' academic achievement, university counselors, shall be in a better commitment position to seriously advice their students about how anxiety affects their academic performance. Monitoring and evaluation strategy shall also be introduced.

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Appendices

Appendix 1; Original Questionnaire

ADDIS ABABA UNIVERSITY

COLLEGE OF EDUCATION AND BEHAVIORAL STUDY

SCHOOL OF PSYCHOLOGY

Survey Questionnaire

Dear respondents! The purpose of this questionnaire is to collect data for the study entitled "*The Association between Depression, Anxiety, Stress, and Academic Achievements among Undergraduate Medical Students of Saint Paul's Hospital Millennium Medical College in Addis Ababa*". The study is one of the requirements for the completion of Masters of Arts degree in psychology at Addis Ababa University.

The study is indispensable in appraising the prevalence and severity of depression, anxiety and stress among undergraduate medical students of Saint Paul's Hospital Millennium Medical College vis-vis with their academic achievements. Questions included in this instrument enable the researcher to get information pertaining to depression, anxiety and stress, on the one hand and students' academic achievement, on the other hand. Thus, your information will be managed confidentiality, only for research paper and contribute to improve the quality of academic environment and your well-being as well. To this end, I kindly ask you to respond to these questions.

Section I

A. Background Information

Item No.	Questions	Coding categories	Code no.	Skip to
101	How old are you?	___age in complete years		
102	Sex	Male Female	1 2	
103	What is your religion?	Orthodox Islam Protestant Catholic Others(specify)	1 2 3 4 5	
104	Former Place of residence	Living in town Living in out of town(rural)	1 2	
105	Years of study?	First year Second year Third year Fourth year Fifth year Six year & above	1 2 3	
106	Do you get money per month? (from your family/relatives or else)	Yes No	1 2	107
107	How much money per month on the average do you get?	_____Ethiopian Birr		
109	What is your marital status?	Married Un married	1 2	
110	Your Cumulative **GPA**	_____		
111	Do you practice physical exercise	Yes No	1 2	
112	Do have a habit of smoking	Yes No	1 2	
113	Average daily sleeping hours	_____ hour per day		

B. Parents' Information

114	Are your parent's (mother and father) alive?	Yes, both are alive Father alive Mother alive None of them are alive	1 2 3 4	
115	What is your parent's marital status?	Married Divorced Separated Widowed	1 2 3 4	
116	What is your father's occupation?	Farmer Merchant Government employee private employee day laborer pensioner other(specify)	1 2 3 4 5 6 7	
117	What is your mother's occupation?	House wife Farmer Merchant Government employee private employee pensioner other(specify)	1 2 3 4 5 6 7	
118	What is your father's educational status?	Illiterate Read and write Primary education(1-8) Secondary education(9-12) Above secondary	1 2 3 4 5	
119	What is your mother's educational status?	Illiterate Read and write Primary education(1-8) Secondary education(9-12) Above secondary	1 2 3 4 5	

Section II. Depression, Anxiety and Stress related Questions

Instruction: Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.
The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	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 (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I just couldn't seem to get going	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8	I found it difficult to relax	0	1	2	3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting upset rather easily	0	1	2	3
12	I felt that I was using a lot of nervous energy	0	1	2	3
13	I felt sad and depressed	0	1	2	3
14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0	1	2	3
15	I had a feeling of faintness	0	1	2	3
16	I felt that I had lost interest in just about everything	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 perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life wasn't worthwhile	0	1	2	3

Reminder of rating scale:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26	I felt down-hearted and blue	0	1	2	3
27	I found that I was very irritable	0	1	2	3
28	I felt I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3
39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

Appendix 2; Amharic version Questionnaire

አዲስ አበባ ዩኒቨርሲቲ

ስነ ትምህርትና ባህሪ ጥናት ኮሌጅ

ሳይኮሎጂ ትምህርት ክፍል

የቅኝት ጥያቄዎች (Survey Questionnaires)

<u>ከቡራን ታዳሚያን፡-</u>

የዚህ መጠይቅ ዋና አላማ

"*The Association between Depression, Anxiety &Stress, and Academic Achievements among Undergraduate Medical Students of Saint Paul's Hospital Millennium Medical Collegein Addis Ababa*" በሚል ርዕስ ጥናት ለማድረግ መረጃ ለመሰብሰብ ነው፡፡ ጥናቱ በአዲስ አበባ ዩኒቨርሲቲ በአዲስ አበባ ዩኒቨርሲቲ ለማስተርስ ዲግሪ እንደማሟያ ያገለግላል ::

ይህ ጥናት በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ የህክምና ተማሪዎችን ድብርት ፣ጭንቀትና ውጥረት (*Depression, Anxiety & Stress*) ከስተትና ጥልቀት ከትምህርት ውጤታቸው ጋር ያለውን ትስስር ስለሚያሳይ እጅግ ጠቃሚ መሆኑ ይታመንበታል፡፡ በዚህ መጠይቅ የተካተቱ ጥያቄች በአንድ በኩልቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ የህክምና ተማሪዎችን ድብርት ፣ጭንቀትና ውጥረት (*Depression, Anxiety & Stress*)ሁኔታ፡ በሌላ በኩል ደግሞ የእነርሱን የትምህርት ውጤት ትስስር ያትታል፡፡በመሆኑም የጥናቱ ውጤት የትምህርታችሁን እና የደህንነታችሁን ሁኔታ እንዲሻሻል ጉዳዩ ለሚመለከታቸው አካላቶች በመጠቆም አስተዋፆ ያደርጋል ተብሎ ይገመታል ::

ስለዚህ የእርስዎ መልስ የጥናቱን ዓላማ ለማሳካት ወሳኝ ነው፣ሚስጥርነቱ እጅግ የተጠበቀ፣ ዓላማው ትምህርታዊ ብቻ ሲሆን ውድ ጊዜዎትን ሰውተው መጠይቁን ስለሞሉልኝ እጅግ በጣም አመሰግናለሁ፡፡

ክፍል አንድ

ሀ.ስለእርስዎ አጠቃላይ ሁኔታ የሚያትቱ ጥያቄዎች

መመሪያ ፡ለጥያቄዎቹ ከተሰጡት አማራጭዎች መካከል በመለያ ኮዱ ስር ካሉት ውስጥ እናንተን የሚመለከቱትን ብቻ አክብቡ፡፡

ተ.ቁ	ጥያቄዎች	አማራጭዎች	መለያኮድ
01	መታወቂያ ቁጥር (Id Number)	_____	
02	እድሜህ/ሽ ስንት ነው?		
03	ፆታ?	ወንድ ሴት	1 2
04	ሀይማኖት?	ኦርቶዶክስ ክርስቲያን ኢስላም ፕሮቴስታንት ካቶሊክ ሌላካለ (ይገለፅ)	1 2 3 4 5
05	የቀድሞ መኖሪያ ቦታ(እዚህ ከመምጣታችሁ በፊት)?	ከተማ ገጠር	1 2
06	የስንተኛ አመት ተማሪ ነህ/ሽ?	1ኛ አመት 2ኛ አመት 3ኛ አመት 4ኛ አመት 5ኛ አመት 6ኛ አመትና በላይ	1 2 3 4 5 6
07	በየወሩ ከቤተሰብ ከቅርብ ወዳጅ ወይም ከሌላ ገንዘብ ታገኛለሽን/ህን?	አዎ አላገኝም	1 2
08	ለ 6ኛው ጥያቄ መልስዎ አዎ ከሆነ፡ በአማካኝ በወር ስንት ብር ያገኛሉ?	------- ብር	
09	የጋብቻ ሁኔታ?	ያላገባ በትዳር ስር የሆነ/ች የፍታ/ች የተለያዩ ባል (ሚስት) በሞት የተለየ	1 2 3 4 5
10	በየቀኑ የሰውነት እንቅስቃሴ ታደርጋለህ/ጊለሽ?	አዎአደርጋለሁ አላደርግም	1 2
11	ሲጋራ የማጨስል ልምድ አለዎትን?	አዎ አለኝ የለኝም	1 2
12	አልኮል መጠጥ የመጠጣት ልምድ አለዎትን?	አዎ አለኝ የለኝም	1 2
13	ጫት የመቃም ልምድ አለዎትን?	አዎ አለኝ የለኝም	1 2
14	በአማካኝ በቀን ስንት ሰዓት ትተኛለህ/ሽ?	-----ሰዓት	
15	አጠቃላይ አማካይ የትምህርት ውጤት(CGPA)?	-------	

ለ .ስለቤተሰብዎ ሁኔታ የሚያትቱ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	አማራጭዎች	መለያኮድ
16	ቤተሰቦችህ/ሽ (እባትና እናት) በህይወት አሉን?	አዎ ሁለቱም አሉ አባቴ አለ እናቴ አለች ሁለቱም የሉም	1 2 3 4
17	ቤተሰቦችህ/ሽ የትዳር ሁኔታ?	በትዳር ስር አብረው ናቸው የተፋቱ የተለያዩ አባት(እናት) በሞት የተለዩ	1 2 3 4
18	የአባትህ/ሽ ስራ ምንድን ነው?	ገበሬ የመንግስት ሰራተኛ ነጋዴ የግል ስራ የሚሰራ የቀን ሰራተኛ ጡረተኛ ሌላ ካለ (ይገለፅ)	1 2 3 4 5 6 7
19	የእናትህ/ሽ ስራ ምንድን ነው?	የቤት እመቤት የመንግስት ሰራተኛ ነጋዴ የግል ስራ የሚትሰራ የቀን ሰራተኛ ጡረተኛ ሌላ ካለ (ይገለፅ)	1 2 3 4 5 6 7
20	የአባትህ/ሽ የትምህርት ደረጃ?	ያልተማሩ ማንበብና መፃፍ የሚችሉ አንደኛ ደርጃ ትምህርት ያጠናቀቁ (1-8) ሁለተኛ ደርጃ ትምህርት ያጠናቀቁ (9-12) ሰርትፊኬት (ድፕሎማ) ያለው ከድፕሎማ በላይ ያለው	1 2 3 4 5 6
21	የእናትህ/ሽ የትምህርት ደረጃ?	ያልተማሩ ማንበብናመፃፍየሚችሉ አንደኛ ደርጃ ትምህርት ያጠናቀቁ (1-8) ሁለተኛ ደርጃ ትምህርት ያጠናቀቁ (9-12) ሰርትፊኬት (ድፕሎማ) ያለው ከድፕሎማ በላይ ያላት	1 2 3 4 5 6

መመሪያ፤ እባክዎትን፡ እያንዳንዱን ጥያቄ በጥሞና ካነበቡ በኋላ፡ባለፈው አንድ ሳምንት ከስተቶች በእርስዎ ላይ ምን ያህል ጊዜ እንደተከሰቱ ከአማራጮቹ በመምረጥ ያክብቡ፡፡ትክክልወይንም ስህተት የሆነ መልስ የለም፡፡ጥያቄዎችን በማንበብ ብዙ ጊዜ አታጥፉ፡፡

<u>የመመዘኛ (መለኪያ) ነጥቦች ድልድል፡</u>

0 በፍፁራሽ በእኔ ላይ ተከሰቶ አያውቅም
1 አንዳንድ ጊዜ (ከሰንት አንድ) አጋጥሞኝ ያውቃል
2 እልፎ አልፎ ያጋጥመኛል
3 ብዙጊዜ አጋጥሞኛል

1	በጥቃቅን ነገሮች ብስጭት ውስጥ እገባለሁ	0	1	2	3
2	የአፌ መድረቅ ይታወቀኛል	0	1	2	3
3	በአጠቃላይ አወንታዊ ስሜት ተሰምቶኝ አያውቅም	0	1	2	3
4	የመተንፈስ ችግር አጋጥሞኝ ያውቃል (ለምሳሌ፡ ያለ እንቅስቃሴ እጅግ በጣም በፍጥነትና በብዛት መተንፍስ፤ ትንፋ ሽማጠር)	0	1	2	3
5	(ጥናቴን፡ ትምህርቴን) ስራየን ማስኬድ አልቻልኩም	0	1	2	3
6	ለክስተቶች የምሰጠው ምላሽ የተጋነነ ነው	0	1	2	3
7	የሰውነት ማንቀጥቀጥ ስሜት ነበረብኝ (ምሳሌ፡ የእግሮቼ አለመታዘዝ)	0	1	2	3
8	ዘና ማለት ይከብደኛል	0	1	2	3
9	ምንም እንኳን ራሴን በጣም በሚያስጨንቅ ሁኔታ ውስጥ ብቆይም ነገሮች ሲያልፉ ግን ሰላሜን አገኛለሁ	0	1	2	3
10	ተስፋ ቢስነት ተሰምቶኝ ያውቃል	0	1	2	3
11	በቀላሉ የምበሳጭ ሰው ነኝ	0	1	2	3
12	ተመጣጣኝ ያልሆነን ሀይል እንደተጠቀምኩ ተሰምቶኛል	0	1	2	3
13	ድብርትና ሀዘን ተሰምቶኛል	0	1	2	3
14	በማንኛውም ሁኔታ የዘገየሁ እንደሆነ ትግስት አጣለሁ	0	1	2	3
15	የደካማነት (አቅም ማነስ) ስሜት ነበረብኝ	0	1	2	3
16	በማንገኛውም ሁኔታ ፍላጎት የማጣት ስሜት ተሰምቶኛል	0	1	2	3
17	ጠቃሚ ሰው አለመሆኔ ይሰማኝ ነበር	0	1	2	3
18	በቀላሉ የምደለል (sensitive) መሆኔ ተሰምቶኛል	0	1	2	3
19	ከፍተኛ ሙቀት ባልኖረበት ወይምያለእንቅስቃሴ ላብ ያልበኛል (ምሳሌ፡ የእጅላብ)	0	1	2	3
20	ያለ በቂ ምክንያት ፍርሀት ተሰምቶኛል ያውቃል	0	1	2	3
21	ህይወት ዋጋ እንደሌላት ተሰምቶኝ ያውቃል	0	1	2	3

<u>የመመዘኛ (መለኪያ) ነጥቦችን ማስታወሻ፡</u>

0 በጭራሽ በእኔ ላይ ተከሰቶ አያውቅም
1 አንዳንድ ጊዜ (ከሰንት አንድ) አጋጥሞኝ ያውቃል
2 አልፎ አልፎ ያጋጥመኛል
3 ብዙ ጊዜ አጋጥሞኛል

22	**ራሴን ዘና ማድረግ ከብዶኛል**	0	1	2	3
23	**(ሁኔታዎችን) አምኖ መቀበል ይከብደኛል**	0	1	2	3
24	**በምሰራቸው ነገሮች ደስተኛ አይደለሁም**	0	1	2	3
25	**ያለሰውነት እንቅስቃሴ የልብ ምቴ ሲንቀሳቀስ ታውቆኛል**	0	1	2	3
26	**ትካዜን ድብርት ተሰምቶኝ ያውቃል**	0	1	2	3
27	**በጣም ተበሳጭቼ እንደነበር ተገንዝቤያለሁ**	0	1	2	3
28	**ለመረበሽና ለአደጋ ቅርብ እንደሆንኩ ተሰምቶኝ ያውቃል**	0	1	2	3
29	**በሆነ ነገር ከተቆጣሁ በኋላ መረጋጋት ይከብደኛል**	0	1	2	3
30	**በጥቃቅን ነገር ግን በማላውቀው ስራ እንዳልደናገር ፈርቼ አውቃለሁ**	0	1	2	3
31	**በማንኛውም ነገር ደስ የሚል ስሜት አልነበረኝም**	0	1	2	3
32	**በስራየ ላይ ለሚገጥመኝ ጣልቃገብነት መታገስ አልችልም**	0	1	2	3
33	**ውጥረት ሁኔታ ላይ ነበርኩ**	0	1	2	3
34	**እጅጉን ዋጋ ቢስእንደሆንኩ ተሰምቶኛል**	0	1	2	3
35	**ስራዬን እንዳልጨርስ የሚያደርገኝን ማንኛውንም ነገር አልታገስም**	0	1	2	3
36	**ፍርሃት ተሰምቶኛል**	0	1	2	3
37	**ከፊት ለፊቴ ምንም ተስፋ የሚሰጥ ነገር አይታየኝም**	0	1	2	3
38	**ህይወት ትርጉም አልባ እንደሆነች ተሰምቶኛል**	0	1	2	3
39	**በውጥረት የተሞላሁኝ ሆኜ እራሴን አግኝቻለሁ**	0	1	2	3
40	**አደጋ ላለው ነገር እጨነቃለሁ፡ በሱም ስራ እፈታለሁ (እንቀዋለላለሁ)**	0	1	2	3
41	**ተንቀጥቅጬ አውቃለሁ (ለምሳሌ፡ እጆቼ)**	0	1	2	3
42	**በራሴ ስራን ለመስራት መነሳሳት አልቻልኩም**	0	1	2	3