

**ASSESSMENT OF PERCEIVED STRESS LEVEL AND ASSOCIATED
FACTORS AMONG HEALTH SCIENCE STUDENTS AT DEBRE
BIREHANE UNIVERSITY,NORTH SHOA ZONE OF AMHARA REGION**

BY:

WUBSHET ESTIFANOS (BScN)

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JIMMA UNIVERSITY
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WUBSHET ESTIFANOS (BScN)

ADVISORS:

1. Mr Teklebrehan Tema (BscN, Msc, Assistant professor)
2. S/r Makeda Sinaga (BSC N, MPH/RH)

ABSTRACT

Introduction: Excessive stress causes physical and mental health problems and also impairs students' academic achievement and personal or professional development. The transition from high school to higher education for students is a stressful experience as they struggle to cope with an array of changing conditions including: movement away from home, change of peer group, the establishment of new friendships and expected to cope with the university academic demands and interaction with local and expatriate instructors with different backgrounds. Therefore, this transition period is accompanied by positive and negative emotional experiences.

Objective: To assess the perceived stress level and associated factors among health science students at Debre birehane University, North Shoa, Ethiopia.

Methods: A cross-sectional study design was employed both quantitative and qualitative methods. Study population was selected by using stratified random sampling technique and data were collected by using structured pre-tested self administered questionnaire. Stratified random sampling method with proportionate allocation was used to get the required sample size 279. Data were entered and analyzed using SPSS software version 16. Frequencies, binary and logistic regression were used to describe and analyze study variables. Ethical approval was granted from JU College of public Health and Medical sciences ethical committee.

Result. The overall Mean PSS score in the study population was 31.09(SD =8.19) and was significantly higher among female students. In this study, 174(63.7%) respondents had got a PSS-14 score greater than 28, with a 95 % CI of (34.78-36.66). The odds of perceived stress level among first year students were higher compared to fourth year student [AOR=3.59; 95% CI (1.47, 8.71)]. High level of perceived stress exists among respondents who had poor relationship with class mates and dorm mates [AOR=5.331; 95% CI=.43,19.78].

Conclusion and Recommendation: A higher level of perceived stress was found by this study. According to this study gender, pocket money, social support, and relationship with class mates and dorm mates, physical problem and ever uses of substance were a significant factors contributing to perceived stress level. Policy makers and the university management to consistently plan suitable activities or programs for the students such as on managing stress.

Key words: Perceived stress, Debre Birehane University health science students.

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ACRONYMS

AKUADS	Aga Khan University Anxiety and Depression Scale
AOR	Adjusted Odds Ratio
ARHB	Amhara Regional Health Bearue
AUDIT	Alcohol use identification scale
CASCS	College of applied studies and community services students
COR	Crude Oddss Ratio
DBU	Debre birehane university
DES	Dental Environment Stress
ERB	Ethical Review Board
FGD	Focus Group Discussion
GHQ	General Health Questions
NIMHANS	National Institute of Mental Health and Neuroscience
PSS	Perceived stress scale
SD	Standard Deviation
SPSS	Statistical Package for the Social Sciences
SRQ	Self Reporting Questionnaire
UCLA	University of California Los Angeles

CHAPTER ONE: INTRODUCTION

1.1. Background information

Stress has been identified as a 20th century disease and has been viewed as a complex and dynamic transaction between individuals and their environments. Stressors can be broadly defined as situations or events that have the potential to affect health outcomes. Stress can be regarded as a psychological threat, in which the individual perceives a situation as a potential threat (1).

Stress is a normal part of life. From birth to death, a person endures stress. It is impossible and not beneficial to avoid all stress in life. Stress is a perceived concept, meaning that it can be caused by anything that one feels unbalances the harmony in his or her life. According to Neumann, a stressor is any relationship between the person and the environment that is appraised by the person as taxing. The relationship can result in either a beneficial or a harmful outcome. Stress has become an important topic in academic circle as well as in our society. Many scholars in the field of behavioral science have carried out extensive research on stress and its outcomes and concluded that the topic needed more attention(2).

According to the American Institute of stress, it is a condition or feeling experienced when a person perceives that demands exceed the personal and social resources the individual is able to mobilize. Individual lives are demanding thus exposing them to stress. Today's fast paced environment, people are always stressed out over deadlines and not having enough time to do everything(3).

Stress is a necessary and unavoidable concomitant of daily living necessary because without some stress we would be listless and apathetic creatures, and unavoidable because it relates to any external event, is it pleasurable or anxiety producing. A person's response towards stress depends on whether an event is appraised as a challenge or a threat. Challenging stimulus can lead to positive outcomes such as motivation and improved task performance while threatening

ones or distress can result in anxiety, depression, social dysfunction and even suicidal intention(4).

Along with the improvements during the scientific era and the rapid development of information, competitiveness among people has become increasingly intense, as a consequence, people have become busier and, therefore, stress is a natural consequence. Even though appropriate stress is a juncture for self - growth, it is also a motivation for people to progress actively. It not only affects our thoughts and feelings but our behavioral models, as well. However, over stress causes problems and discomfort, and can have serious effects on people. Specifically, student faces the stress when they enter a completely new world of professional education(4).

Leaving home for college is a developmental milestone that can exacerbate existing psychological difficulties or trigger the emergence of new ones. One-in-three college students experience depression severe enough to impair functioning during the undergraduate years (5). Most college students who commit suicide are depressed, and suicide is the second leading cause of death among college students. As many as 10-20% of college students threaten or attempt suicide during their college years. College students with depression are twice as likely as their classmates to drop out of school, new research shows. Many students with depression as with the general population remain untreated."Maybe the biggest reason is only about 50 percent of people with depression say they think they need help (5).

University setting is a new, challenging experience which mostly corresponds to the early adulthood. Early adulthood in general, is marked by more new roles like developing partnership, leaving parents' homes, and beginning work or joining higher education. Although this period is the best time of physical strengths, it is the worst time of mental health due to the demanding tasks(6). Being a university student is a milestone of early adulthood. Most of the young people live apart from their families, know new people, try to find new friends and shoulder financial responsibilities(4). For many young adults, college is the best time of life. These critical years of adjustment can also be undermined by depression, anxiety, substance abuse and eating disorders. Researchers are finding that many mental illnesses are traced to trauma, whose damage surfaces in times of stress and change, such as the college years(7).

Stress is a term that can be linked to so many situations that people are confronted with due to rapidly changing values, life style, career patterns and family role expectations. These life situations have the potential to increase the level of stress people experience. The transition from senior high school to university level is a significant contributor to changing values and lifestyles among the young people especially among those gaining admission. Stress is a common element in the lives of every individual regardless of race or cultural background(8).

Academic stress among college students has been a topic of interest for many years. College students are prone to stress due to the transitional nature of college life. For example, many college students move away from home for the first time, which can necessitate leaving all previously learned support systems such as parents, siblings and high school friends (9).

Students may need to develop entirely new social contacts and are expected to take responsibility for their own needs. They may have difficulty adjusting to more rigorous academic expectations and the need to learn to deal with individuals of differing cultures and beliefs. Thus, stress may result from being separated from home for the first time, the transition from a personal to an impersonal academic environment, and the very structure of the academic experience at the college level. Significant changes in living conditions, the novel demands of the college academic environment, and the large change in social surroundings are just a few of the potential sources of stress for a college student. College students experience high stress at predictable times each semester due to academic commitments, financial pressures, and lack of time management skills(10).

1.2. Statement of the problem

Mental disorders are leading causes of disability worldwide, accounting for one-third of the years lost due to disability(3). About 25% of the world's population develops mental illness at some stage in their life's pace, 450 million people suffer from mental or neurological disorders and over 150 million people suffer from depression and most of these people live in developing countries. In low-income countries, mental disorders contribute 12% to the Global Burden of disease as compared to 8.1% in the developed world(3).

Research indicates that college students are no strangers to varying degrees of stress. Studies by Pierceall and Keim have reported that 75% to 80% of college students are moderately stressed and 10% to 12% are severely stressed while Hudd established that during a typical semester, high levels of stress have been reported for 52% of college student(8). Stress is a part of a college student's existence and has a profound impact on their ability to cope with college life(8). In addition, college students have been shown to possess a unique set of stressors which can affect their daily experience(8).

Stress is a major problem for college students throughout the world. One of the most frightening consequences of college student stress is suicide because of depression. In 2005, the National College Health Assessment (NCHA) surveyed 17,000 college students. Twenty-five percent of the students reported they have "felt so depressed it was difficult to function" three to eight times in the past 12 months. Twenty one percent of the students reported that they "seriously considered suicide."(11) According to the 2005 National Survey of Counseling Centre Directors, 154 students committed suicide(12).

Stress in academic institutions can have both positive and negative consequences if not well managed(13). Academic institutions have different work settings compared to non academic and therefore one would expect the difference in symptoms, causes, and consequences of stress (13). It is important to the society that students should learn and acquire the necessary knowledge and skills that will in turn make them contribute positively to the development of the general economy of any nation. However, the intricate academic environment sometimes poses great medical problems to the students' lives that tend to negate the positive gains that one would

expect after completion of University(13). College students are feeling more overwhelmed and stressed than fifteen years ago, according to a recent UCLA survey of college freshman. More than 30% of all college freshman report feeling overwhelmed - a great deal of the time. Thirty-eight percent of college women report feeling frequently overwhelmed (7).

Dealing with stress in unique way, college students experience a range of consequences from mild to severe stress. A common consequence of college stress is a feeling of being overwhelmed. While trying to find a balance of how to work hard, many college students struggle with unhealthy habits like heavy drinking. In addition, students in college experience stress related to academic requirements, support systems, and ineffective coping skills(8).

According to National Crime Records Bureau (ANCRB) 110,417 people committed suicide in the year 2002, which is 1.8% more than compared to 2001. I.e. a suicide is committed every 5 minutes. 7 times that number attempt to take their lives and as for those who feel desperate and unable to cope, the number is mind boggling. More suicides occur between 18 and 45 - in other words in the most productive age group of our society.69% of people suffering from stress related disorders such as depression were apprehensive that society would consider them to be crazy.55 % of people suffering from stress related disorders say they have no or very few close friends. 71% people under stress refrain from social activities.50% of people under stress say they are not able to pursue leisure activities or hobbies(14).

Depression among the youth has increased from 2% to 12% in the last 5 years. Globally 3/ 5 visits to the doctor are for stress related problems. 76% people under stress say they have sleeping disorders and 58% suffer headaches. Laughing helps ease stress, and laughing 100 times equals 10 minutes of working out on a rowing machine or 15 minutes of cycling. 85% of people under stress tend to have strained relations with family and friends. 70% of people under stress say they have become short-tempered. A National Institute of Mental Health and Neuroscience (NIMHANS) study says 36 % techies in Bangalore show signs of psychiatric disorder. Globally 1/ 10 students suffer significant distress. Over 50% of lost workdays across the world are due to stress, says an ILO study. 16000 students in India committed suicide between 2004 and 2008(14).

Stress contributes to major life-threatening problems such as heart attack, stroke, depression and infection, as well as to chronic aches and pains and around 54 % of Americans is concerned about the level of stress in their everyday lives. It also linked to the six leading causes of death heart disease, cancer, lung ailments, accidents, cirrhosis of the liver, and suicide. Stress often makes college students sick because it has a negative impact on immune systems. An approximately 75%to 90% freshmen college student visits to primary care physicians for stress related complaints or disorders.

It is important for the university to maintain well balanced academic environment conducive for better learning, with the focus on the students' personal needs. Students' expectations vary with respect to personality and their backgrounds which influences on how one perceive the environment around him/her. Students at the university have different expectations, goals, and values that they want to fulfill at the university, which is only possible if the students' expectations, goals, and values are integrated with that of the university(13). Stress poses a great threat to quality of life for students. Students interact amongst themselves as well as with their lecturers, therefore unduly stressed and unhappy students will reflect this in the process of the engagement that may result in conflict. Universities have moral duty to protect academic environment by adopting measures that reduce students' exposure to situations where stress may become a problem(13).

The widening of participation in tertiary education over the past decade has increased the number of students who may be more vulnerable to pressures inherent in higher education, such as students from culturally and linguistically diverse backgrounds, students with physical or mental disabilities, students who join certain field without their interest or those from backgrounds where they are the first family member to attend university.

Although not stated as priority, mental health problem was mentioned in national health policy of Ethiopia; one of the important reasons is lack of data on the extent of mental disorders especially in higher learning institutions. Therefore to institute policies and strategies for intervention and control of mental illnesses, their magnitude in specific communities should be generally determined.

In Ethiopia few studies address mental health issues among students in higher institution. Accurate epidemiological information is necessary to understand the extent and burden of mental health problems in students in higher institution specifically in health science students, guide interventions that decrease risk and improve student psychological wellbeing and there by mental health status, and monitor trends over time.

Therefore, the aim of this study is to assess the perceived stress level and associated factors among health science students at Debre birehane University.

CHAPTER TWO: LITERATURE REVIEW

2.1. Concept of stress

The concept of stress has been gaining more and more attention in the popular press as well as in professional literature in almost every field. A review of literature has shown that there is a strong relationship between stress and college students(15). One important factor to consider when researching stress is to explore which sources of stress are beneficial and which sources are detrimental (15). Some individuals are more sensitive or prone to some stressors than others. Stress is caused by environmental and internal demands that need to be adjusted continuously. These eventual and internal demands will vary from student to students(16).

The word stress is derived from the Latin word "stringi", which means, "to be drawn tight". Modern definitions of stress share a number of essential ingredients. They all, to a greater or lesser extent, recognize that stress: is a personal experience, is caused by pressure or demands and impacts upon the individual's ability to cope or, at least, his/her perception of that ability. 'Stress arises when individuals perceive that they cannot adequately cope with the demands being made on them or with threats to their well-being.'(17)

According to Randy and David "Stress is the subjective feeling produced by events that are uncontrollable or threatening." Constant stress brings about changes in the balance of hormones in the body which may lead to the situation or thought that makes us feel frustrated, angry, nervous, or anxious (18).

College students have more severe mental-health problems than ever before (19). Psychologists identified some common reasons why college students experience academic problems; which includes, Motivation factors, inadequate time management, study skills social interactions learning disabilities, substance abuse and psychological issues. A large number of students are struggling with the many demands of college life while also dealing unassisted with major emotional issues such as loss, depression, and anxiety. Undiagnosed and untreated, many of these kinds of problems lead to academic difficulties or failure (20).

In a 2010 research conducted in china to identify Coping flexibility in college students with depressive symptoms, undergraduates with depressive symptoms were more likely than other undergraduates to utilize maladaptive coping methods. Such findings highlight the potential importance of interventions aimed at helping undergraduate students with a lower coping flexibility develop skills to cope with stressful life events (21).

Another longitudinal study conducted in UK to identify predictors of psychological distress in college students in 2004 employed self-report study, spanning a period of 6 months. One hundred sixty-one undergraduate college students completed selected measures of psychological distress, rumination, and stress at two time points 6 months apart. Although many variables may contribute to students' depressive symptoms, the most common factors involve academic performance, social stressors, financial problems, and the adjustment inherent in the transition from a family setting to a college environment(22)

A research conducted in Michigan University to assess the prevalence and correlates of depression, anxiety and suicidality among university students publicize that the prevalence of any depressive or anxiety disorder was 15.6% for undergraduates. Suicidal ideation in the past 4 weeks was reported by 2.5% of the undergraduate students. Missing academic obligations in the past 4 weeks because of mental health problems was reported by 18.4% of undergraduate students. These findings highlight the need to address mental health in young adult population (23).

2.2. Prevalence of perceived stress level

Research conducted in Ziauddin Medical University in Karachi, Pakistan to assess anxiety and depression levels among medical students of a private university using a self-administered anxiety and depression questionnaire. It was found out that 60% students had anxiety and depression (24). Research conducted in 2009 in Egypt, Mansoura College of Nursing to investigate the level of stress among BSc nursing students found that Mild to moderate stress level (Low stress) and severe stress (High stress) were encountered in 59.8 and 40.2% of the students respectively. Clinical anxiety was reported in nearly half of the sample (46.6%) and depression in (27.9%) (1).

Research conducted in Addis Ababa to assess the prevalence of psychological distress among medical students in the year 2001 using SRQ showed that the one month prevalence of mental distress was found to be 32.6%. Over 6.0% reported that they had suicidal ideation in the last one month (25).

Another study showed among Alemaya university students in 2005 by using SRQ-20, the prevalence of psychological distress was found to be 19.3% (26). Study conducted from May to June 2002 by Moges Ayele and Amare Mengistu to assess psychosocial problems of Jimma university students showed that prevalence of anxiety and depression were 41.0 % and 23.0 % respectively(27).

A cross sectional study was conducted on assessment of stress level among dental school students in India (2011). A total of 304 undergraduate students constituted the study population. A modified dental environmental stress questionnaire was administered to all dental students. Of the respondent, 60% were men and 40% were women. The final year students presented with higher stress scores. In gender comparison, men suffered more stress (62.9%) than women (60.1%). According to the career choice decision, students forced by parents had more perception of stress (69.0%) and the students staying in the hostel (62.7%) showed more perception of stress than day scholars (56.3%) (28).

According to the study conducted in Malaysia to assess Prevalence and sources of Stress among Universities Sains Malaysia Medical Students, of 761 respondents 474 (62.3%) of which were female students. (17). A study was conducted in Jordan in 2011 to assess Stress among University Students. Female students have more stress level (3.16) than males (3.14) (29).

A study in Australia in 2011 showed that among university students who score high in Alcohol use identification scale (AUDIT) have higher psychological distress score on Kessler depression assessment scale than those who score low (30).

A cross-sectional community based study conducted in Jimma town including 1200 individuals from October 15 to November 15, 2009 using self reporting questionnaire found that mental distress and khat use have significant association and the study conclude that the high rate of

that use among the young person's calls for public intervention to prevent more serious forms of substance use disorders (31).

In a research conducted from December 2004 to January 2005 to identify prevalence and correlates of psychological distress among Alemaya university students having psychological distress in the last four weeks was higher among students who were using sedative compared to students who were not using sedatives(26).

A cross-sectional study was conducted to determine prevalence of current depressive, anxiety, and stress-related symptoms on a dimensional and categorical basis among young adults in India (2011). Data were obtained using Depression, Anxiety, and Stress Scale to assess symptoms on dimensional basis and using Mini International Neuropsychiatric Interview to diagnose on categorical basis. Ranging from mild to extremely severe, depressive symptoms was present in 18.5% of the population, anxiety in 24.4%, and stress in 20%. Clinical depression was present in 12.1% and generalized anxiety disorder in 19.0%. Co morbid anxiety and depression was high, with about 87% of those having depression also suffering from anxiety disorder. Detecting depressive, anxiety, and stress-related symptoms in the college population is a critical preventive strategy(32).

A study was conducted on factors affecting stress among dental students in India (2011). A modified Dental Environment Stress (DES) Questionnaire was administered to 256 dental students. The main sources of stress were found to be fear of facing parents after failure, full loaded day, and fear of failing course or year. The results of this study indicated that a congenial environment needs to be created for dental education and parents also need to be counselled against forcing their children to join an educational program that is not of their choice(33).

An exploratory study was conducted on depression, anxiety and stress among adolescent students belonging to affluent families in India (2010).A total of 242 adolescent students belonging to class 9-12th selected for the study. It was seen that depression was significantly more among the females (mean rank 132.5) than the males (mean rank 113.2). Depression,

Anxiety and Stress were all significantly higher among the 'board classes' i.e., 10th and 12th as compared to the classes 9th and 11th. All the three (DAS) were found to have an inverse relationship with the academic performance of the students. Depression and Stress were found to be significantly associated with the number of adverse events in the student's life that occurred in last one year(34).

An analytical study was conducted on prevalence and social determinants of suicidal behaviors among college youth in India (2010). The study surveyed 1,817 undergraduate college students aged 18-24 years with a questionnaire that assessed suicidal behaviors as well as stressful situations and life events. Logistic regression analysis was used to assess risk factors. The prevalence of lifetime suicide ideation and lifetime suicide attempts was 11.7% and 4.0%, respectively(35).

An exploratory study was conducted on stress among first year students in an Indian medical school (2009). The study was undertaken to determine the prevalence and sources of stress among first year Malaysian students. First year students (n=125) were invited to participated in the study. The General Health Questionnaire (GHQ) which consisted of 12 questions was used as the screening instrument. The sources of stress in students were identified by asking them to respond to a questionnaire which had items categorized under academic and non-academic problems. It was found that the prevalence of stress among the students was 37.3%(36).

A cross sectional study was conducted on perceived stress among female medical and non-medical university students in Saudi Arabia (2008). All 319 pre-clinical female medical students and 297 non-medical students were selected by stratified random sampling. The study among medical students (48.6%) reported being frequently stressed due to studies than College of applied studies and community services [CASCS] students (38.7%,) (37).

A study conducted on perceived sources of stress among dental students in India (2009), showed that the major stressor for all the students was examination. This study also appeared that there is a need for the establishment of student advisors and counselors combined with a faculty advising system in addition to student-oriented programmer(38).

Study conducted in 2011 in Malaysia to assess Prevalence of Depression and the Impact of Psychosocial Factors in Undergraduate Students at a Private University found that the proportion of those who suffered from psychological distress decreased during the study years and it was almost 1/3 lower among last year students than among freshmen (12.5 vs. 35.3%) (39). The non-health disciplines were significantly more distressed than the health disciplines 58% of law 52% of mechanical engineering followed by 44% of medical students and 40% of psychology students. Mechanical engineering students were the least likely to sought help as revealed by a 2007 cross-sectional study conducted to assess Distress Levels and Self-Reported Treatment Rates for Medicine, Law, Psychology and Mechanical Engineering Tertiary Students in Australia (40).

A research conducted in Uludag University Bursa, Turkey show that Depression, anxiety and stress levels of moderate severity or above were found that first- and second-year students had higher depression, anxiety and stress scores than the others. Students who were satisfied with their education had lower depression, anxiety and stress scores than those who were not satisfied(41).College Chronic Life Stress Survey' constructed by Towbes and Cohen (1996) focuses on the frequency of chronic stress in the lives of college students(4).

A study conducted in Ziauddin Medical University in Karachi, Pakistan to assess anxiety and depression levels among medical students of a private university in the year 2003 by using a self-administered Aga Khan University Anxiety and Depression Scale (AKUADS) which has higher specificity, sensitivity and predictive values than SRQ showed that Prevalence of anxiety and depression in students of 4th year, 3rd year, 2nd year and 1st year was 49%, 47%, 73% and 66% respectively (24).

According to the study conducted in the University Of Cape Town, South Africa, significant difference was found between year of study and the total psychological distress score. First-year undergraduate students reported less distress than subsequent year undergraduate students. Analysis conducted to explore whether initial level of anxiety-depression has effect on students academic performance show that there is a strong and significant relationship between high levels of anxiety and poor examination results (42). Individuals generally respond better to stress when they have social ties and support that is, close friends and groups to which they belong. Individuals are able to cope better when they can share their experiences with others. When individuals are members of a group to which they “belong”, they can receive emotional support, help with problems, and even a boost to self-esteem as shown by a research conducted in Uludag University, Turkey(43). People benefit from the support provided by their immediate environment in times of need and this support may be emotional or material and most of the studies show that informal social support (friends, family, etc.) is preferred to formal social support by college students (44).

2.2. Significance of the study

Most lifetime mental disorders have first onset during or shortly before the typical college age and these problems may be precipitated or exacerbated by the variety of stressors in college life. Universities are well positioned to promote mental health among young people because they encompass several important aspects of students' lives academic, health services, residences, social networks and extracurricular activities. Therefore, conducting this research to obtain evidence-based and realist information on assessment of perceived stress level and the need to launch on an intervention program appears to be timely agenda on the table. An important understanding of mental health in this setting might be readily translated to multiple campuses and thus reach a large proportion of young adult population. This enhances adequate adaptation, achieving expected performance, timely addressing of mental health problems as they arise and minimizes dropouts to the possible minimum in order that student retention and overall cognitive development are enhanced and there by helps to produce skilled man power in the field.

Stress is one of the serious issues that affect university student's life; its effects could be reflected in student social, academics, and mental health(29). According to a study conducted on Assessing Stress among University Students found that stress can lead to academic decline, poor relationships with peers and family members and overall dissatisfaction with life. So each university has to assess its students stress in order to provide them with the suitable mental health care and the efficient methods to cope with stress. This study should provide stakeholders with scientific information related to stress level in order to help students to avoid stress from the beginning(29).

In Ethiopia, no researches were done in this respect, so this study was conducted to assess the perceived stress level and associated factors among health science students at Debre birehane University. Because related researches conducted are lacking in Ethiopia, This study also helps local health planners, policy makers and organizations working on mental health program for effective planning and implementation of program. Furthermore; the findings serve as a base line for further related studies.

2.3. Conceptual framework

Conceptual framework was adapted from published research that was conducted in a Pakistani Medical undergraduate School (46).

Dependent Variable: The dependent variable of this study was Perceived stress level. It is a measure of the degree in a person to assess their life as the stressfulness of the situations in the past month of their lives.

Independent variable: Based on literature review, the following variables were described as independent variables: socio-demographic variables, academic related variables, psychosocial related variables, health related variables, and substance use related variables.

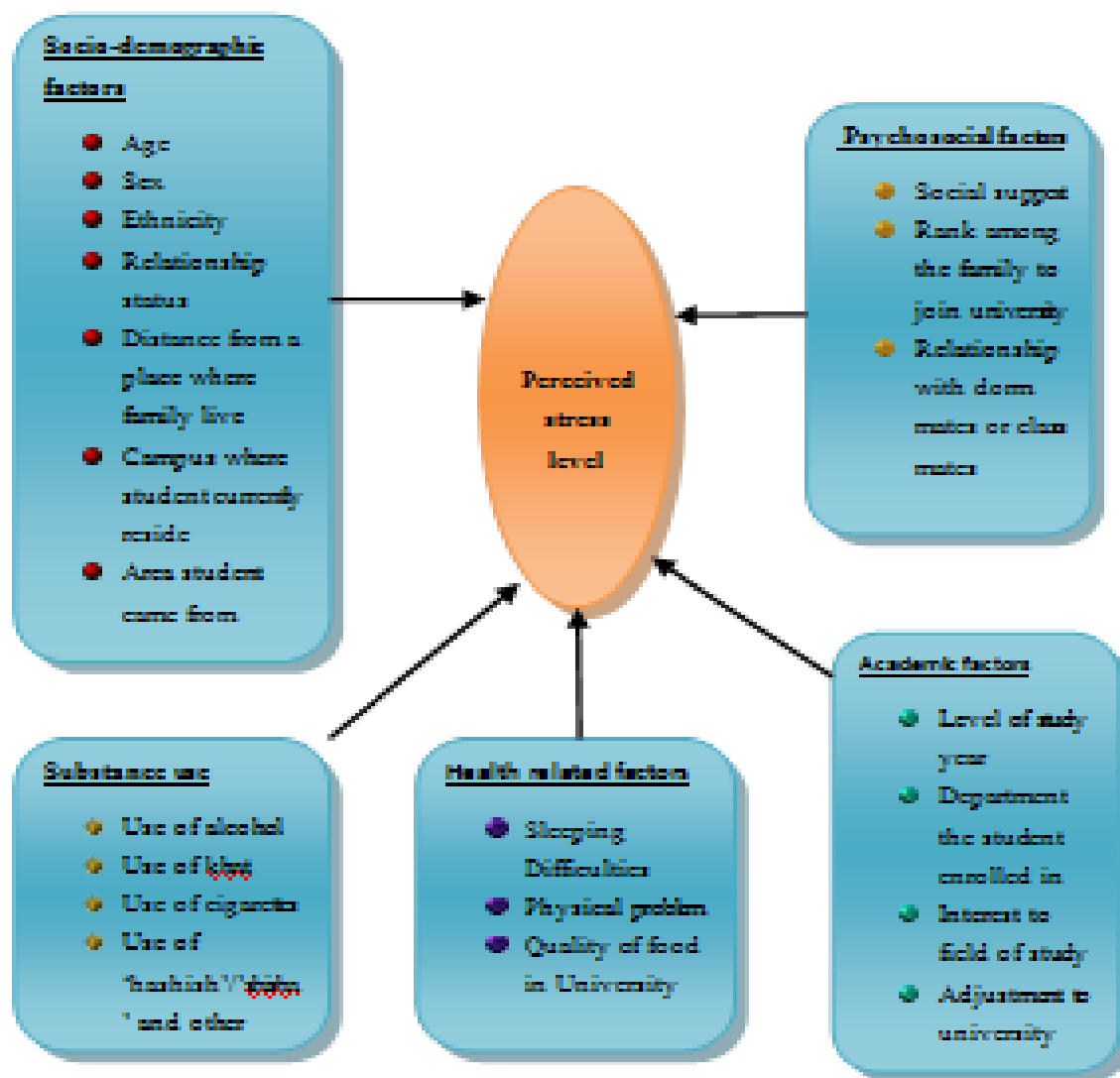


Figure 1 Conceptual framework of perceived stress level among regular undergraduate university student

Figure 1 Conceptual framework of perceived stress level among health science students

CHAPTER THREE: OBJECTIVE OF THE STUDY

3.1. General objective

To assess the perceived stress level and associated factor among health science students at Deber birehane University, 2013.

3.2 Specific objectives

1. To assess the perceived stress level among health science students at Deber birehane University, 2013.
2. To identify the factors influencing perceived stress level among health science students at Deber birehane University, 2013.

CHAPTER FOUR: METHODS AND SUBJECTS

4.1 Study area and period

The study was conducted from February 10 – March 10 2013 on Health Science students at Debre birehane University found in Debre birehane town. The town is located in north shoa zone 695km from the Bahir Dar a capital city of the Amhara Region and 135 km from the Addis Ababa on the paved highway to Dessie. DEBRE BIRHAN UNIVERSITY (DBU) is one of the thirteen New Universities which was established in 1999 E.C by the Ethiopian government. Currently there are a total of 7 faculties and 31 departments for regular undergraduate studies. The total student population is about 8872.

4.2. Study Design

A cross-sectional study design was employed both quantitative and qualitative methods to assess the perceived stress level and associated factor among regular health science students at Debre birehane University.

4.3 Population

4.3.1 Quantitative Study

4.3.1.1 Source population

All health science students registered in 20012/2013 academic year in Debre Birehan University.

4.3.1.2 Study population

A sampled of student from selected study year who attended in a regular program during the academic year of 2012/2013.

4.4 Inclusion and Exclusion criteria

4.4.1 Inclusion

Regular health science students who registered from 1st to 4th year and attend their classes during the study period in Debre Birehane University.

4.4.2 Exclusion

Extension, summer and distance education students are not included.

4.5 Sample size determination and sampling technique

4.5.1 Sample size determination

4.5.1.1 Quantitative study

The sample size was calculated using a single population proportion formula by taking 50% proportion, 5% marginal error and standardized normal distribution at 95% CI. I did not find any earlier estimates of prevalence of stress among health science students in Ethiopia. Therefore I assumed the prevalence to be 50 % and calculated the required sample for this study by taking an allowable error of 5%, 95% confidence limits and 10% for non-responders.

By using those parameters,

$$n = \frac{z \left(\frac{\alpha}{2} \right)^2 * P(1 - p)}{d^2}$$

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

Where;

n- Is the minimum sample size required?

p-by taking 50%

d- Is the margin of sampling error tolerated (5%)

$Z_{\alpha/2}$ the standard normal variable at $(1-\alpha)$ % confidence level and, α is mostly 5% i.e., with 95% confidence level. Since the source population was less than 10,000 the sample size was adjusted with the following correlation formula.

$$nf = \frac{ni}{1 + \frac{ni}{N}}$$
$$nf = \frac{384}{1 + \frac{384}{752}}$$

Adding non response rate of 10% the total sample size becomes 279.

4.5.1.2 Qualitative study

This method was utilized to explore inherent views of the participants and further build-up and supplement the results of quantitative study. Four FGDs, comprising six participants per FGD were conducted two of FGD were on females while the other two FGD were in males. Participants involved in the FGD were not involved in the quantitative study.

4.5.2 Sampling technique

4.5.2.1 Quantitative study

Stratified random sampling method with proportionate allocation was used to get the required sample size. Strata were created based on study year and sample within each stratum were further selected by simple random sampling.

$$n_x = \left(\frac{N_x}{N} \right) n$$

Where;

n = sample size

n_x = sample size in stratum x

N = number of source population

N_x = population size in stratum

x = number of stratum (study year x=1, 2...5)

$$n_1 = \left(\frac{165}{752} \right) 279 = 61 \text{ (Sample size from first year students)}$$

$$n_2 = \left(\frac{180}{752} \right) 279 = 67 \text{ (sample size from second year)}$$

$$n_3 = \left(\frac{198}{752} \right) 279 = 73 \text{ (sample size from third year)}$$

$$n_4 = \left(\frac{209}{752} \right) 279 = 78 \text{ (sample size from fourth year)}$$

$$n_1 + n_2 + n_3 + n_4 = 279$$

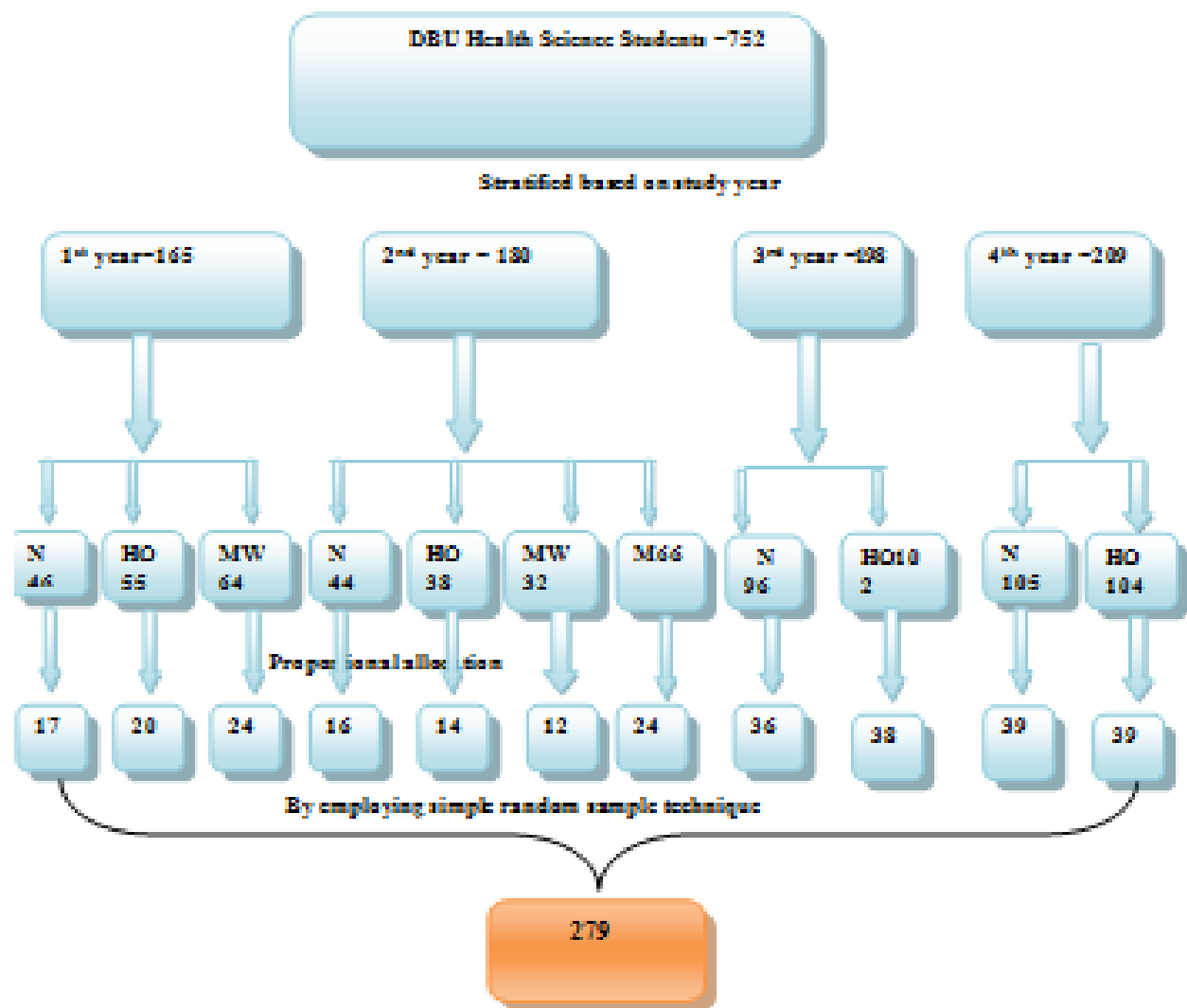


Figure 2 Schematic Presentation of Sampling Procedure.

4.5.2.2 Qualitative Study

A convenient sampling technique was used to select students for the FGD by considering both the inclusion and exclusion criteria to determine Debre birehane University among health science student's perceived stress level. A minimum of four FGD by mixing students based on their class year and sex was prepared and the maximum N₀ was determined based on the saturation ideas.

4.6 Measurement and variables

4.6.1 Data collection instrument and procedure

4.6.1.1 For Quantitative study

Data was collected using self-administered questionnaire by using PSS-14- item. This instrument was developed by Cohen, S., & Williamson, G. Perceived Stress is a measure of the degree in a person assesses their life as the stressfulness of the situations in the past month of their lives. The Perceived Stress Scale (PSS) is a nonspecific stress appraisal. As a result, it measures only current (not chronic) levels of perceived stress. The Perceived Stress Scale (PSS) is the most widely used index of perceived stress and was used in this study. Respondents were asked to measure an individual's level of perceived stress in the past month(8). The questionnaire had four sections to collect socio-demographic data, perceived stress level, substance use and questions to assess adjusting to university classes. Perceived stress was measured using the perceived stress scale (PSS-14) [19], which comprised of 14 questions with responses varying from 0 to 4 for each item and ranging from never, almost never, sometimes, fairly often and very often respectively on the basis of their occurrence during one month prior to the study. It assesses the degree to which participants evaluate their lives as being stressful during the past month. It does not tie appraisal to a particular situation; the scale is sensitive to the nonoccurrence of events as well as ongoing life circumstances. The PSS scores are obtained by reversing the responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 0) to the four positively stated items (items 4, 5, 7, and 8) and then summing across all the scale items. The scale yielded a single score with high scores indicating higher levels of stress and lower levels indicating lower levels of stress.

4.6.1.2 For Qualitative study

Four FGD were prepared after reviewing relevant literatures .From the seven trained data collection facilitator the two were selected and conducted the FGD. Additionally trained moderator and note taker were used .The questions were first written in English and were converted into Amharic for the discussion and transcription and retranslated to English to check its consistency. The FGD was tape-recorded and held in quiet and comfortable place.

4.6.2 Study Variables

Independent Variables

Socio-demographic variables

- ✚ Age
- ✚ Sex
- ✚ Religion
- ✚ Ethnicity
- ✚ Relationship status
- ✚ Distance from a place where family live
- ✚ Campus where student reside
- ✚ Area students came from
- ✚ Income

Academic demand variables

- Level of study year
- Field of study
- Interest to field of study
- Cumulative GPA
- Adjustment to university classes year.

Substance related variables

- ▶ Use of alcohol
- ▶ Use of khat
- ▶ Use of cigarettes
- ▶ Use of ‘hashish’/’shisha’ and other

Psychosocial variables

- ❖ Social support
- ❖ Rank among the family to join university
- ❖ Relationship with dorm mates or class mates

Health related variables

- ◆ Sleeping difficulty
- ◆ Physical problem
- ◆ Quality of food in the University

Dependent Variable

- ➡ Perceived stress level

4.6.3 Data Collection Method

Data were collected from study subjects by self-administered technique using structured questionnaire for quantitative part and FGD. Voice recorders and field-notes were used to capture the information for qualitative part.

4.7 Data collectors training and pre-testing

4.7.1 Pre-test

Before the actual data collection, the quantitative questionnaire was pre-tested on 5% of the total sample size was carried out using a self administered questionnaire on social science students with the main study area .The purpose of the pre-testing was to ensure that the respondents are able to understand the questions and to check the wording, logic and skip order of the questions in a sensible way to the respondents. Amendments were made accordingly after pre-testing. Additionally to check the reliability of measuring instrument Cronbach's alpha calculated for question related to perceived stress level, psychosocial factors ,and academic related factors was 0.78, 0.82 and 0.88 respectively, which was considered as reliable.

4.7.2 Data collector

Four instructors were recruited and participated throughout the data collection and collects the questionnaires.

4.8 Data processing & analysis

4.8.1. For quantitative data

After collection each of quantitative data, each questionnaire was checked for completeness and code was given before data entry. Data were entered, cleaned, missed values, missed variables and analyzed using SPSS version 16.0 statistical packages. Different frequency tables, graphs and descriptive summaries were used to describe the study variables Binary and multiple logistic regression tests were used to examine associations between dependent and independent variables. Then those variables that had p-value < 0.25 were considered and multiple logistic regressions was performed to see the independent effect each variable, which reveal association with the dependent variable. Odds ratio with its p- value and confidence interval was used or reported in each logistic regression analysis. Independent variables with P-value ≤ 0.05 with dependent variable was considered as statistically significant. Results were summarized using tables, figures and graphs.

4.8.2. For Qualitative data

Data were first transcribed from Amharic in to English verbatim .Data were analyzed from recording the field notes after checking, organizing, coding, conceptualizing and categorizing. Then similar responses was grouped and summarized based on thematic area or the key variables of the study. Concepts extracted from themes were presented in narratives and triangulated with the quantitative results.

4.9. Data Quality Control

To achieve a good data quality:

- ✚ Closer supervision was undertaken during data collection.
- ✚ Pre-testing was done on 5% of the total sample size on social science students with the main study area.

4.10. Ethical Consideration

The Ethical clearance letter was obtained from ethical review board (ERB) of Jimma University, College of Public Health and Medical Science. Letter for cooperation was handed to the head of Debre birehane University research director, DBU Medicine department, DBU Nursing department, DBU health officer department and Midwifery. The purpose of the study and its

benefit to the society was explained to the clients. The oral and written consent was obtained from each study subjects while the study subjects have the right to refuse was respected. Clients were told that refusal to participate in the study does not affect the service they should have given. Different measures were taken to assure the confidentiality of study subject's response such as writing their names or any identification in the questionnaire was not required.

4.11. Operational Definition and definition of terms

1. **Perceived stress levels;** an individual's perceived response to interaction with his or her environment as measured by the Perceived Stress Scale.
2. **High level stress;** respondents having a PSS-14 score >28
3. **Low level stress;** respondents having a PSS-14 score ≤ 28 (45).
4. **Student's academic performance;** It was measured using final Cumulative GPA of students at the end of their previous academic years (as it was reported by the students). It was to get clue whether students without perceived stress level were achieved more compared to students with perceived stress level.
5. **Social support;** is an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient. The support can be from family, friend or the community.
6. **Substance Use; Current users:** when students use specified substance in the last year.
Ever users: when students use specified substance even once in their life time.

4.12. Dissemination of the Study Result

The result of the study will be communicated to:

- ▶ Jimma University Public Health and Medical Sciences College Graduate School
- ▶ Department of Nursing
- ▶ DBU
- ▶ Different institutions working with area of study.
- ▶ Finally, efforts will be made for publication.

CHAPTER FIVE: RESULTS

5.1. Socio-demographic characteristics of the respondents

From a total of 279 sampled populations, two hundred seventy three study subjects gave their informed consent making the respondent rate 98%. 150 (54.9%) were males. Among the respondents minority 14(5.1%) of them were from Debre birehane town in residence. The mean age of the respondents were 21.9 (\pm SD 2.59). The majority 238 (87.2%) of respondents were found to be between the age group of 18-24 and 25 (12.8 %) were age greater than or equal to 25. Concerning year of study 77(28.2%) was fourth year followed by third year which account, 72(26.4%).

The majority 204(874.7) were followers of orthodox Christian followed by Muslims which account 39(14.3%). With regard to ethnic composition of the respondents 197(72.2 %) were students belong to Amhara followed by Oromo which account 37(13.6%). Concerning marital status, 216 (79.1%) students were single and 33(12.1%) were have a boy friend or girl friend. The total distribution of study subjects among different departments of the university, 110(40.3%) and 105(38.5%) were Health Officer and nursing students respectively.

Among the respondents 190(69.6%) earned <300.00 and above 1000.00 Ethiopian birr average monthly income respectively.

Table 1 Socio- demographic characteristics of Debre birehane University Health science students in the year 213.

Variables	Categories	Frequencies(n=273)	Percentages
Sex	Male	150	54.9
	Female	123	45.1
Age	18-24	238	87.2
	Above 25	35	12.8
Ethnicity	Amhara	197	72.2
	Oromo	37	13.6
	Tigre	26	9.5
	Others	13	4.8
Religion	Orthodox	204	74.7
	Muslims	39	14.3
	Protestants	25	9.2
	Others	5	1.8
Study year	First	61	22.3
	Second	63	23.1
	Third	72	26.4
	Fourth	77	28.2
Field of study	Medicine	22	8.1
	Nurse	105	38.5
	Health officer	110	40.3
	Midwifery	36	13.2
Relationship status	Single	216	79.1
	Married	24	8.8
	Have a boy or girl friend	33	12.1
Residence of respondents	Debrebirehane	14	5.1
	Out of Debrebirehane	259	94.9

Pocket Money	<300.00	190	69.6
	300.00-500.00	60	22.0
	>500.00	23	8.4

5.2. Perceived stress level

Among the respondents 69.2% of the students were found upset because of something that happened unexpectedly in the last month, 53.1% students were not found nervous and stressed in the last month and 46.9% found nervous and stressed in the last month, 63.4% were found that they could cope up with important changes that were occurring in student's life in the last month. 73.6% of the students do found themselves thinking about the things that they have to accomplish in the last month while the remaining 26.4% of the students did not find themselves thinking about the things that they have to accomplish in the last month, 73.6% of the students felt that they are confident about their abilities to handle their personal problems in the last month but the remaining 26.4% of the students felt that they are not confident about their abilities to handle their personal problems in the last month. 69.9% of the students were able to control the way they spend their time in the last month and the rest 30.1% of the students were not able to control the way they spend their time in the last month. However 54.2% of the students were found angered because of the things that were beyond their control in the last month while 45.8% of the students were not found angered because of the things that were beyond their control in the last month. 54.6% of the student felt difficulties were piling up so high that you could overcome in the last month but the rest 45.4 % of the student felt difficulties were piling up so high that you could not overcome in the last month.

Table 2 Distribution of Debre birehane University Health Science Students' their responses related to the perceived stress level, 2013.

Statement	Never N (%)	Almost never N (%)	Someti mes N (%)	Fairly often N (%)	Very often N (%)
During last month, how often had you been upset because of something that happened unexpectedly?	84(30.8)	0(0)	152(55.7)	37(13.5)	0(0)
During last month, how often have you felt that you were unable to control the important things in your life?	101(37.0)	69(25.3)	61(22.3)	29(10.6)	13(4.8)
During last month, how often have you felt nervous and stressed?	100(36.6)	45(16.5)	81(29.7)	31(11.4)	16(5.9)
During last month, how often have you dealt successfully with irritating life hassles?	69(25.3)	64(23.4)	67(24.5)	53(19.4)	20(7.3)
During last month, how often have you felt that you effectively coping with important changes that occurring in your life?	47(17.2)	53(19.4)	67(24.5)	70(25.6)	36(13.2)
During last month, how often have you felt confident about your ability to handle personal problems?	43(15.8)	29(10.6)	48(17.6)	81(29.7)	72(26.4)
During last month, how often have you felt that things were going your way?	36(13.2)	52(19.0)	82(30.0)	74(27.1)	29(10.6)
During last month, how often have you found that you could not cope with all things that you had to do?	74(27.1)	84(30.8)	67(24.5)	39(14.3)	9(3.3)
During last month, how often have you been able to control irritations in your life?	45(16.5)	41(15.0)	78(28.6)	71(26.0)	38(13.9)
During last month, how often have you felt that you were on top of things?	37(13.6)	55(20.1)	97(35.5)	62(22.7)	22(8.1)
During last month, how often have you been	56(20.5)	69(25.3)	89(32.6)	39(14.3)	20(7.3)

angered because of things that happened that been outside of your control?					
During last month, how often have you found yourself thinking about things that you have to accomplish?	36(13.2)	36(13.2)	61(22.3)	89(32.6)	51(18.7)
During last month, how often have you been able to control the way you spend your time?	39(14.3)	43(15.8)	65(23.8)	82(30.0)	44(16.1)
During last month, how often have you felt difficulties piling up so high that you could not overcome them?	57(20.9)	92(33.7)	67(24.5)	32(11.7)	25(9.2)

A Mean PSS score in the study population was 31.09(SD =8.19). The overall perceived stress level was (63.7 %).

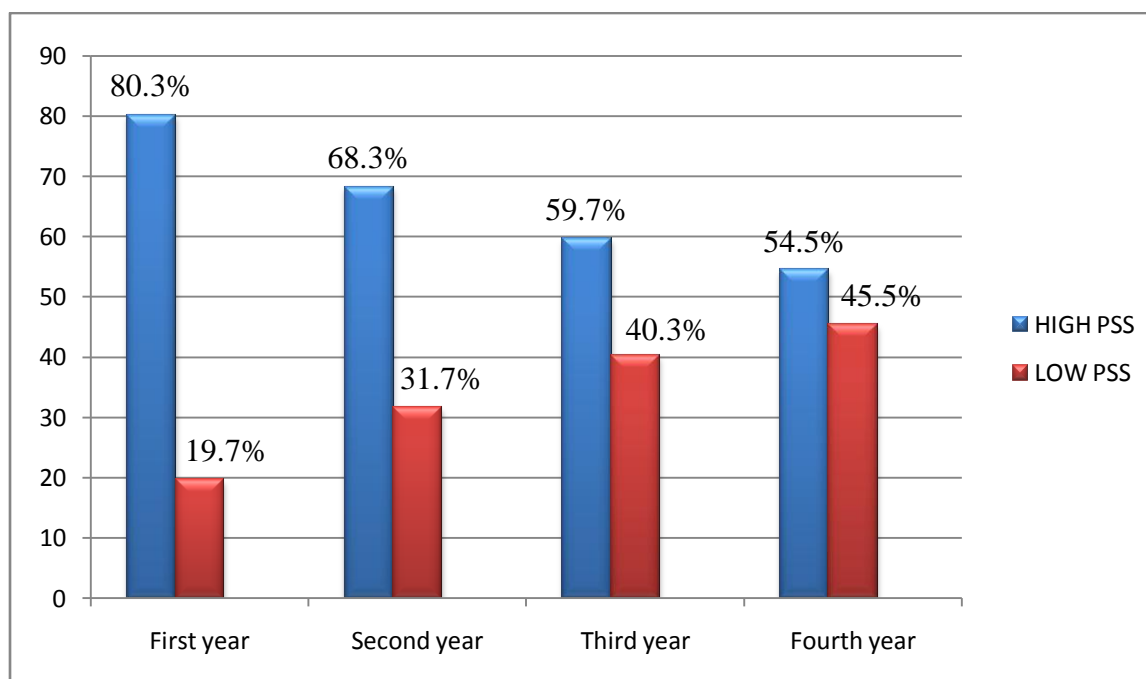


Figure 3 Distribution of Debre birehane University Health Science students by perceived stress level based on study year, 2013.

5.3. Psychosocial factors

Out of 273 respondents, 160 (58.6%) were the first child for the family to join university. 146 (53.5%), 73 (26.7%) and 54(19.8%) had adequate, inadequate and no support from their family, their friends and the community respectively. Regarding the relationship with class mates and dorm mates 157 (57.5%) had very good relationship status with their class mates and dorm mates and 75 (27.5%) had good relationship status with their class mates and dorm mates respectively.

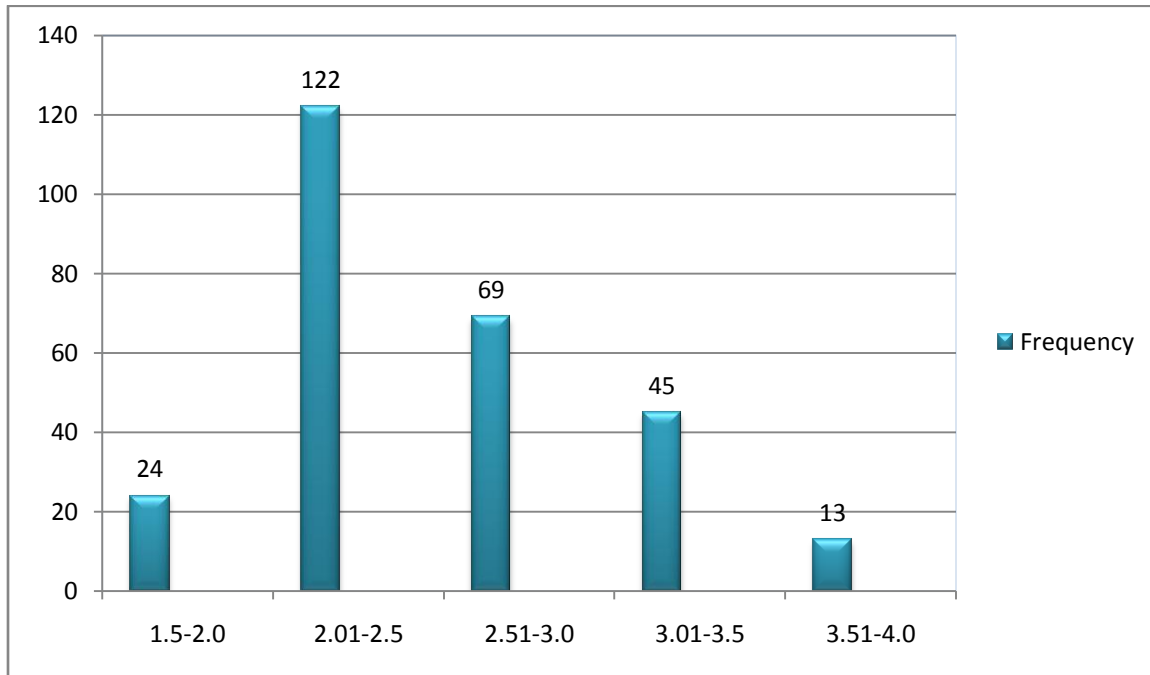
Table 3 Distribution of Debrebirehane University Health science students by factors related to psychosocial, north Shoa Ethiopia, 2013.

		Frequency (273)	
Variables related to psychosocial factors		Number	Percentages
Social support	Adequate	146	53.5
	Inadequate	73	26.7
	No support	54	19.8
Rank among the family to join university	The first child	160	58.6
	Not the first child	113	41.4
Relationship status with class mates or dorm mates	Very good	157	57.5
	Good	75	27.5
	Not good	41	15.0

5.4. Academic related factors

Among the respondents by academic year enrollment 77(28.2%) were four year students followed by third year which account 72(26.4%). Out of the 273 study subjects 110(40.3%), 105(38.5%), 36(13.2) and 22(8.1%) were Health officer, nurse, midwifery and medicine respectively according to the department the student enrolled in the Debre birehane University. Regarding the study subject who were enrolled in each department 201(73.6%) were enrolled according to their choice.

Distribution of student's performance was measured using their last cumulative grade in the last year, and it accounted a mean score of 2.63 and standard deviation + 1.05 and had a range between 1.66 and 4.00.



Average cumulative grade point

Figure 4 Distribution of Debre Birehane University Health Science students based on their Average Cumulative Grade point, 2013.

Table 4 Distribution of Debrebirehane University Health Science students by Academic factors, north Shoa Ethiopia, 2013.

Frequency (273)			
Variables related to academic factors		Numbers	Percentages
Study year	First	61	22.3
	Second	63	23.1
	Third	72	26.4
	Fourth	77	28.2
Field of study	Medicine	22	8.1
	Nurses	105	38.2
	Health officer	110	40.3
	Midwifery	36	13.1
Interest to field of study is your choice	Yes	201	73.6
	No	72	26.4

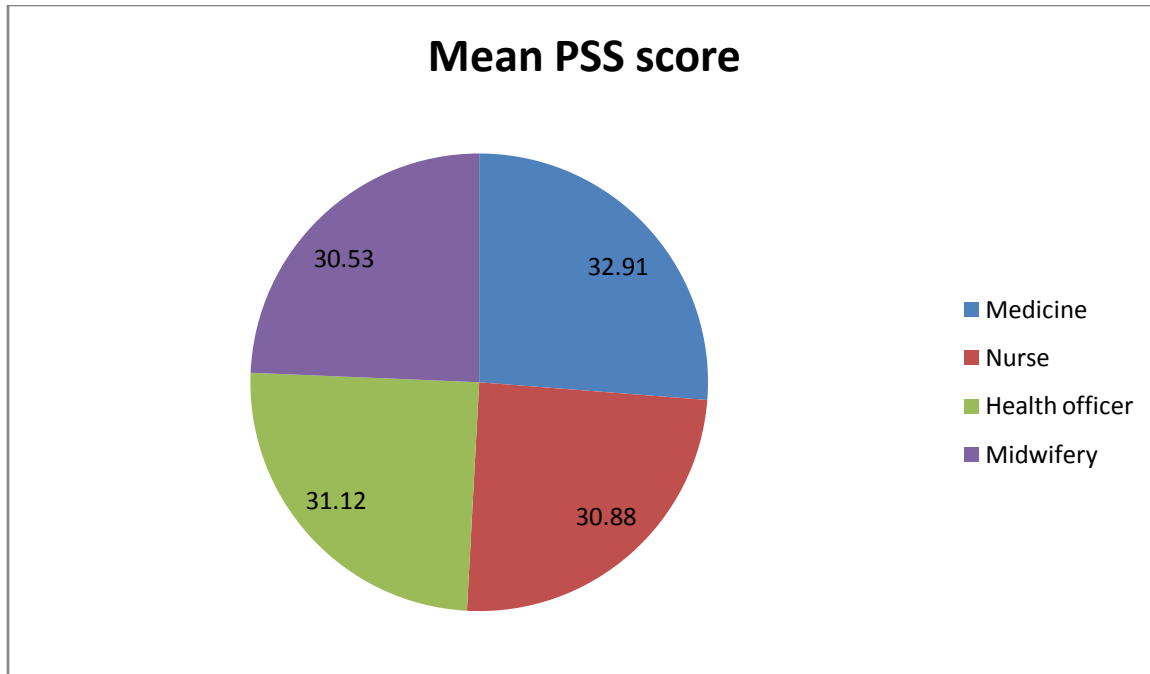


Figure 5 Mean PSS Score between students of different study courses of DBU health science students, February 2013.

5.4.1. Adjustment to university classes

Among the respondents 143(52.40%) reported that the teachers didn't care whether the students understand their teaching or not, 160(58.6%) students had trouble concentrating, 151(55.3%) said supervision and direction by teachers is insufficient,80(29.3%) students joined the university being not sufficiently prepared psychologically for university, and 103(37.8%) students had difficulty organizing work.

Table 5 Distribution of Debrebirehane University Health Science students by adjustment to classes, north Shoa Ethiopia, 2013.

Variables related to Adjustment to university classes(n=273)	Strongly agree		Agree		Strongly disagree		Disagree	
	N	%	N	%	N	%	N	%
The teacher don't care whether the students understand the work or not	44	16.1	99	36.3	110	40.3	20	7.3
It is difficult what I have to learn	27	9.9	51	18.7	145	53.1	50	18.3
I have trouble concentrating	51	18.7	109	39.9	89	32.6	24	8.8
Supervision and direction by teachers is insufficient	64	23.4	87	31.9	103	37.7	19	7.0
I joined university being not sufficiently prepared psychologically for university work	29	10.6	51	18.7	118	43.2	75	27.5
I have difficulty organizing my work	25	9.2	78	28.6	113	41.4	57	20.9

5.5. Health related factors

Out of the respondents 217(74.5%) were found to have no sleeping difficulty. Among the respondents 204(74.7%) were found that they had no any diagnosed physical problem or condition from which they experienced pain or stress in the last one month. From 273 study subject 149(54.6%), 96(35.2%) and 28(10.3%) were reported that the quality of food in the university were not good, inadequate and adequate respectively.

Table 6 Distribution of Debre birehane Health Science students by Health related factors, north Shoa Ethiopia, 2013.

Variables related to Health related factors		Number	Percentage
Sleeping difficulty	Yes	56	20.5
	No	217	79.5
Physical problem	Yes	75	25.6
	No	198	74.4
Quality of food	Adequate	28	10.3
	Inadequate	96	35.1
	Not good	149	54.6

5.6. History of Substance use among study subjects

Out of the total 273 study subjects seventy four (30.8%) students were currently (in the last 12 months Period) using khat and eighty four (27.1 %) had practiced khat chewing at least once in their life time. More over one hundred thirty six student (49.8 %) had used alcohol at least once in their life time, and one hundred nine (39.9%) of the students were drinking alcohol in the last 12 months.

Eighteen students (6.6%) had practiced tobacco products consumption at least once in their life time and sixteen students (5.9%) reported to have an experience of smoking. On the other hand eight (2.9 %) of them found to have used substances like Hashish at the time of the study, and five (1.8%) respondents had practiced these substances at least once in their life time.

Those students who used substances were asked for their reasons to use. Accordingly, from the total of 74 students who practiced Khat chewing mentioned major reasons for khat chewing practice were fifty six (20.5%) to get personal pleasure, thirty nine (14.3%) to increase work or academic performance, thirty seven (13.6%) to get relief from tension, thirty four (12.5%) to be sociable, twenty (7.3%) to get acceptance from others/to be like others eleven (4.0 %) due to academic dissatisfaction and the remaining four (1.5%) to combat against exhaustion and hunger.

Out of 109 students who practiced alcohol, major reasons for drinking alcohol eighty four (39.0 %) to get personal pleasure, forty nine (23.6 %) to be sociable, forty six(16.8%) to get relief from tension, eighteen (6.8%) to get acceptance from others/ to be like others (peer pressure), ten (3.7%) due to academic dissatisfaction, nine (3.3%) to increase work or academic performance and the remaining six (2.2%) to combat against exhaustion and hunger reasons.

Respondents were asked about reason for tobacco smoking, Eight (2.9 %) of them said that to get personal pleasure, eight (2.9%) to get relief tension, five (1.8 %) to increase work or academic performance, four (1.5 %) due to academic dissatisfaction, three (1.1 %) to get acceptance from others/to be like others, three (1.1 %) to be sociable while the rest two (0.7%) to combat against exhaustion and hunger. Seven (2.6%) to get personal pleasure, three (1.1%) to get relief tension, three (1.1%) to be sociable while the remaining one (0.4%) to increase work or academic performance.

Table 7 Distribution of Debre birehane University Health Science Students by Substance use, 2013.

Characteristics	Last 12 month		Life time		
	Frequency	Percentage	Frequency	Percentage	
Khat use	User	74	27.1	84	30.8
	Non user	199	72.9	189	69.2
Alcohol use	User	109	39.9	136	49.9
	Non user	164	60.1	137	60.1
Cigarette use	User	16	5.9	18	6.6
	Non user	257	94.1	255	93.4
Substance like shisha	User	8	2.9	10	3.7
	Non user	265	97.1	263	96.3

5.7. Identified factors contributing to perceived stress level among health science students

The multivariate logistic regression analysis identified gender, pocket money, social support, and relationship with class mates and dorm mates, and substance use as significant factors contributing to perceived stress level.

Respondents who had a pocket money <300.00 Ethiopian birr 9.37 times more likely to experience high perceived stress level when compared with respondents who had pocket money >500.00 Ethiopian birr (AOR=9.37, 95% CI=2.76, 31.82). And Respondents who had pocket money 300-500 Ethiopian 4.50 times more likely to experience high perceived stress level when compared with respondents who had pocket money >500.00 Ethiopian birr (AOR=4.50, 95% CI= 1.24,16.29).

As this study showed that respondents who had no support get from family, friends and community 4.32 times more likely to experience high perceived stress level than respondents who had adequate support from their family, their friends and community [AOR=4.32;95% CI= 2.49,12.41].

Depending on the result of this study showed that the odds of perceived stress level among respondents who had a poor relationship with class mates and dorm mates 5.331 higher compared to the respondents who had a very good relationship with class mates and dorm mates [AOR=5.331; 95% CI=.43,19.78].

There was statistically significant difference in perceived stress level between different level of study year , and the odds of perceived stress level among first year students was 3.59 higher compared to fourth year students [AOR=3.59; 95% CI (1.47, 8.71)].

The odds of perceived stress level among the respondents who had any diagnosed physical problem or condition from which the respondents experienced pain or stress in the last one month 2.60 times higher compared to the respondents who had not any diagnosed physical problem or condition from which the respondents experienced pain or stress in the last one month [AOR=2.60; 95% CI (1.21, 5.57)].

Table 8 Multivariate Logistic regression analysis for factors contributing to Perceived stress level among Health Science students at Debre Birehane University, north shoa, 2013.

Variables	Status of perceived stress level(n=273)		COR(95% CI)	AOR(95% CI)	P-value
	High	Low			
Gender					
Male	81(54.0)	69(46.0)	1	1	
Female	93(75.6)	30(24.4)	2.64(1.57,4.45)*	2.39(1.18,4.30)*	0.013
Age					
18-24	153(64.3)	85(35.7)	1.20(0.58,2.25)	1.52(0.67,3.50)	0.28
Above 25	21(60.0)	14(40.0)	1	1	
Relations					
ip status					
Single	136(63.0)	80(37.0)	1	1	
Married	15(62.5)	9(37.5)	0.98(0.41,2.34)	1.05(0.41,2.72)	0.90
Have a boy or girl friend	23(69.7)	10(30.3)	1.35(0.61,2.99)	1.28(0.55,2.98)	0.57
Study					
year					
First year	49(80.3%)	12(19.7%)	3.40(1.57,7.38)**	3.59(1.47,8.71)**	0.005
Second year	43(68.3%)	20(31.7%)	1.79(0.89,3.59)	1.66(0.72,3.77)	0.230
Third year	43(59.7%)	29(40.3)	1.23(0.64,2.37)	1.46(0.66,3.22)	0.346
Fourth year	42(54.5%)	35(45.5%)	1	1	
Relations					
hip with					
Very good	97(61.8%)	60(38.2%)	1	1	
CD					
Good	41(54.7%)	34(45.3%)	0.72(0.41-1.26)	0.60(0.30,1.19)	0.143
Not good	39(95.1%)	2(4.9%)	8.04(2.38,27.21)*	5.33(1.43,19.78)*	0.012
Social					
support					
Adequate	71(48.6%)	75(51.4%)	1	1	

	Inadequate	60(82.2%)	13(17.8%)	4.88(2.47,9.64)	0.73(0.399,1.40)	0.356
	No support	46(85.2%)	8(14.8%)	5.43(2.47,11.91)**	4.32(2.49,12.41)**	0.002
Physical problem	No	116(58.6%)	82(41.4%)	1	1	
	Yes	58(77.3%)	17(22.75)	2.41(1.31,4.43)**	2.60(1.21,5.57)*	0.014
Pocket money	Above 500.00	19(54.3%)	16(45.7%)	1	1	
	Below 300.00	109(69.0%)	49(31.0%)	6.29(2.36,17.76)**	9.37(2.76,31.82)**	0.000
	300.00-500.00	49(61.2%)	31(38.8%)	4.56(1.57,13.24)*	4.50(1.24,16.29)*	0.022

* Statistically significant P<0.05

** Highly statistically significant P<0.01

NB: Variables with P-value <0.25 by binary logistic regression entered the multiple logistic regression Model

5.8. Substance use and perceived stress level

The likelihood of having perceived stress level among respondents who were using substances (alcohol, shisha and tobacco) 2.03 times higher compared to who were not using substances (alcohol, tobacco and shisha). This finding is in line with study done by Katherine Skip worth (AOR = 2.885, 95% C.I.1.390, 5.990). This could be explained by using substance students exposed to high stress level than who are not using substance.

Table 9 Comparison of Debre birehane Health Science Students by substance use and perceived stress level, north shoa, 2013.

Substance user	Frequency	Status of perceived stress level		COR(95%CI)	AOR(95%CI)	P=value	
		HIGH PSS	LOW PSS				
Khat	User	74	53(71.6%)	21(28.4%)	1.62(0.91,2.90)	1.31(0.69,2.49)	0.40
	Non user	199	121(60.8%)	78(39.2%)	1	1	
Alcohol	User	109	78(71.6%)	31(28.4%)	1.55(0.92,2.59)	1.31(0.74,2.32)	0.34
	Non user	164	96(58.5%)	68(41.5%)	1	1	
Tobacco	User	16	13(81.2%)	3(18.8%)	2.58(0.71,9.29)	1.30(0.24,6.93)	0.76
	Non user	257	161(62.6%)	96(37.4%)	1	1	
Shisha	User	8	7(87.5%)	1(12.5%)	4.10(0.49,33.89)	2.36(0.17,33.20)	0.52
	Non user	265	167(63.0%)	98(37.05)	1	1	
Substance user	User	130	92(70.8%)	38(39.2%)	1.67(1.02,2.78)*	2.03(1.04, 3.97)*	0.04
	Non user	143	82(57.3%)	61(42.7%)	1	1	

* Statistically significant $P < 0.05$

** Highly statistically significant $P < 0.01$. NB: Variables with P-value < 0.25 by binary logistic regression entered the multiple logistic regression Model

CHAPTER SIX: DISCUSSION

A high prevalence of stress among health and medical students is a cause of concern as it may impair behavior of students, diminish learning, and ultimately affect patient care after their graduation. This study was conducted to assess the perceived stress level and associated factors among health science student.

In this study the overall the perceived stress level was 63.70%. This is dissimilar to the Thai study (61.4%). The higher prevalence perceived stress in this study could be as a result of competitive and stressful academic life and environmental factors such as economic pressure, separation from family members and any problem arise from adolescent age group.

The factors associated with perceived stress level among respondents were gender , relationship status with class mates and dorm mate ,physical problem , pocket money, social support ,study year and substance use.

In gender comparison, female 2.39 times more likely to experience high level of perceived stress level as compared to men. This is comparable with the study conducted in a Pakistani Medical School students female suffered more stress than men(AOR 2.25, 95% CI 1.13-4.49)(28). This could be explained by the fact that females are more subjected to the community pressure and they are still under the pressure of the cultural habits. This result is supported by FGD discussant, 20 years female old student from nursing department said “as to me *female students exposed to stress than male in university because here in the university there are a lot of problem that occur on female students and this problem leads us to stress. Especially I become anxious and feel stressed all the time when I think of my grade result.*”

Regarding study year enrollment first year students 3.59 times more likely to experience higher perceived stress level as compared to fourth year students. This finding is congruent to the study done among Universities Saints Malaysia Medical Students. One possible reason for the high stress prevalence in first year students that they are apart from their families for the first time, know new people, try to find new friends and expected to cope with the university academic demands and interaction with local and expatriate instructors with different backgrounds.

Respondents who did not get support from family, friends and community 4.32 times more likely to experience high perceived stress level than the respondents who had adequate support from family, friends and community. It was similar with the study conducted in a Pakistani Medical School (AOR= 5.01, 95% CI 2.44-10.29). This finding also supported by Qualitative study. A 21years old male discussant said *"I've felt stress about being far from home and it's a huge change of where I'm living and not being near parents, friends or relatives."*

The study further identified that having any diagnosed physical problem or condition from which students experienced pain or stress had 2.60 times more likely to experience high perceived stress level compared to those who does not have any diagnosed physical problem or condition from which students experienced pain or stress. This finding is comparable the study done in Saudi Arabia [(AOR=2.01 95% CI 1.4-2.8)]. One possible reason for high stress level could be lack of support from their friends and families.

Similarly high level of perceived stress exists among respondents who had poor relationship with class mates and dorm mates 5.33 times more likely to experience high level of perceived stress level than who had a good relationship with class mates and dorm mates. This finding is similar to the study done by Sheikh, in which the most common associated factors related to causes of stress were relationship problems in college. It is supported by Qualitative study. One 19 years old female discussant said, *"I don't have a friend with whom I can share my joys and sorrows, and talk about my problems with my friends the reason why I always pressurized or become stressed."*

Respondents who had a pocket money <300.00 Ethiopian birr 9.37 times more likely to experience high perceived stress level when compared with respondents who had pocket money >500.00 Ethiopian birr. And Respondents who had pocket money 300-500 Ethiopian 4.50 times more likely to experience high experiencing perceived stress level when compared with respondents who had pocket money >500.00 Ethiopian birr. Same finding was reported by Bojuwoye, Ross et al, Gushae et al, Seyedfatemi et al, which indicated that the lack of financial support was one of the factors that contributed to stress among university students The higher

perceived stress level could be explained by those respondents with lower pocket money may not be exercising self-help or independence by the money they get rather they become stressed.

Further, a significant correlation was found between perceived stress and academic performance with correlation coefficient (-0.165). It means that when the level of stress is higher, the academic performance will be lower. These findings are inconsistent with Womble (2003) who found that student stress was not significantly correlated with student GPA. The reason for such lower mean CGPA among students with higher perceived stress level could be that in a poor country, where there is only few opportunity for success, having lower mark or having a cumulative GPA in a border level for a failure could not give time to sleep or take rest and could do all possibilities in a non-programmed manner.

6.2. Strength and limitation of the study

Strength

- ✓ Used qualitative and quantitative study

Limitation

- ✓ Since the study took place at only one university, which will affect the generalizability to other institutions.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION

7.1. Conclusion

- ➡ The prevalence of perceived stress level was 63.7%. The higher prevalence perceived stress in this study could be as a result of competitive and stressful academic life and environmental factors such as economic pressure, separation from family members and any problem arise from adolescent age group.
- ➡ From Socio-economic factors such as gender and pocket money were contributing factors for perceived stress level. Female students perceived significant more stress in this study than male fellow students.
- ➡ Social support and relationship with class mates and dorm mates were among factors that influence the risk perceived stress level.
- ➡ Among health related factors the only factors that contributing to perceived stress level was Physical problem.
- ➡ Study year is the only the factors that contribute to perceived stress level among the academic related factors and first year students has high perceived stress level.
- ➡ Regarding substance use among study subject there is a significant association exists between perceived stress level and mixed use of substance (alcohol, and tobacco and shisha user).

7.2. Recommendation

Based on the findings of this study, the following recommendations were forwarded.

1. Faculty of Health Science needs to explore strategies to improve the student relationship.
2. Faculty need to develop trusting, supportive relationships with students to enhance the student's academic progress, self-esteem and feelings of competence.
3. Policy makers and the university management to consistently plan suitable activities or programs for the students such as organizing talks on financial management, motivation, study skills and especially topics on managing stress.
4. In Educational institution there should be a student counselor or student affairs committee whose purpose is to not only provide counseling related to the studies but also solve problems that student face.
5. Faculty should implement comprehensive stress management programs during student's freshman year and continuing until graduation.
6. Strengthening or establishing positive affirmative action to protect female students who are at risk of perceived stress level. These students should be referred to student support services for tutoring, counseling or financial aid.
7. Further prospective study covering wide range of samples and different higher institutions in different geographical locations are recommended on predictors' of perceived stress level.

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ANNEX I. DATA COLLECTION TOOLS

English Version Questionnaire

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES DEPARTMENT OF NURSING

Dear students

In the case of mental health promotion of the young educated people to understand the existing magnitude of some common mental disorders, studies in higher learning institute is found to be of great significance. In line with this a study is proposed to assess the perceived stress level among regular Undergraduate health science students at Debre birehane University and to evaluate the factors influencing perceived stress level and the result will help the university to identify those factors and address them to improve the overall cognitive development of the students and thereby contribute for the goal of producing skilled man powers. You are kindly requested to complete this questionnaire. There is no need of writing your name or id number on the format and we would like to reassure you that the information you are going to provide will be kept confidential. It is your right to participate or refuse to involve in the study. If you do not want to participate in the study, you can put the format in the table upside down. But your honest participation will have contribution to generate valid information. So please take these questions to answer. If you need clarification please don't hesitate to ask the facilitators for clarification.

PLEASE DO NOT PUT YOUR NAME OR IDENTIFICATION NUMBERS ON THIS FORM.

Are you willing?

Yes []

No []

Thank you!

Part I. Questions related with socio-demographic characteristics

After reading the following questions which asks about demographic characteristics, please give appropriate answer by encircling your number of choice or write on the space provided.

1. Age in complete year _____
2. Sex
 - a. Male
 - b. Female
3. What is the level of your study year?
 - a. 1st year
 - b. 2nd year
 - c. 3rd year
 - d. 4th year
 - e. 5th year
4. What is your religion?
 - a. Orthodox
 - b. Muslim
 - c. Protestant
 - d. Catholic
 - e. I have no religion
 - f. Others specify _____
5. What is your ethnicity?
 - a. Amhara
 - b. Oromo
 - c. Tigre
 - d. Wolayta
 - e. Harari
 - f. Somali
 - g. Gurage
 - h. Others specify _____
6. What is your field of study?
 - a. Nurse
 - b. Health officer
 - c. Environmental health

- d. Medical laboratory
 - e. Midwifery
 - f. Medicine
7. What is your relationship status now?
- a. Single
 - b. Married
 - c. have boy or girl friend
 - d. Others specify _____
8. What is your monthly personal income in Birr? _____
9. Are your family live here in Debre birehane town?
- a. Yes
 - b. No
10. If your family live out of Debre birehane, what is the distance in km from Debre birehane to the place where your families currently live? _____
11. Where did you attend your preparatory education?
- a. In a rural school
 - b. In sub urban school
 - c. In urban school
12. How can you describe the support you get from your family, your friends and the community?
- a. Adequate
 - b. Inadequate
 - c. No support
13. Was your field of study is your choice?
- a. Yes
 - b. No
14. How can you describe your relationship with your dorm mates and classmates?
- a. Very good
 - b. Good
 - c. Not good
15. Are you the first person among your families to join university?
- a. Yes
 - b. No

- 16.** What was your last semester cumulative grade (CGPA)? _____ (it works for only 2nd year and above students)
- 17.** Do you have any diagnosed physical problem or condition from which you experienced pain or stress in the last one month?
- a.** Yes
 - b.** No
- 18.** Do you have sleeping difficulty?
- a.** Yes
 - b.** No
- 19.** If yes for Q18, How many times/hours per day do you sleep_____?
- 20.** How do you describe the quality of food in the University?
- a.** Adequate
 - b.** Inadequate
 - c.** Not good

Part II. Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during last month fall 2005. In each case you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate. Remember that your answers can never be matched up with your name, so please try to answer the question as honest as possible.

For each question choose one of the following alternatives: 0 = never 1 = almost never 2 = sometimes 3 = fairly often 4 = very often

1. During last month, how often had you been upset because of something that happened unexpectedly?
0 1 2 3 4
2. During last month, how often have you felt that you were unable to control the important things in your life?
0 1 2 3 4
3. During last month, how often have you felt nervous and stressed?
0 1 2 3 4
4. During last month, how often have you dealt successfully with irritating life hassles?
0 1 2 3 4
5. During last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
0 1 2 3 4
6. During last month, how often have you felt confident about your ability to handle personal problems?
0 1 2 3 4
7. During last month, how often have you felt that things were going your way?
0 1 2 3 4
8. During last month, how often have you found that you could not cope with all things that you had to do?

0 1 2 3 4

9. During last month, how often have you been able to control irritations in your life?

0 1 2 3 4

10. During last month, how often have you felt that you were on top of things?

0 1 2 3 4

11. During last month, how often have you been angered because of things that happened that been outside of your control?

0 1 2 3 4

12. During last month, how often have you found yourself thinking about things that you have to accomplish?

0 1 2 3 4

13. During last month, how often have you been able to control the way you spend your time?

0 1 2 3 4

14. During last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0 1 2 3 4

Part III. Questions to assess adjusting to university classes

1. The teachers don't care whether the students understand the work or not
 - a. strongly agree
 - b. agree
 - c. disagree
 - d. strongly disagree
2. It is difficult to know what I have to learn
 - a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree
3. I have trouble concentrating
 - a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree
4. Supervision and direction by teachers is insufficient
 - a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree
5. I joined the university being not sufficiently prepared psychologically for university work.
 - a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree
6. I have difficulties organizing my work
 - a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree

Part IV. Questions to assess substance use

Table 10 The following questions are specific to Khat chewing Practices in particular.

1.	Have you ever used khat in your life?	Yes	No
2	Have you used Khat in the last 12 months?	Yes	No
3	What was your reason(s) to use khat?		
a.	To increase work or academic performance	Yes	No
b.	To get relief from tension	Yes	No
c.	To combat against exhaustion and hunger	Yes	No
d.	Due to academic dissatisfaction	Yes	No
e.	Due to religious practices	Yes	No
f.	To get acceptance from others / to be like others/	Yes	No
g.	To be sociable	Yes	No
h.	To get personal pleasure	Yes	No
i.	specify _____		

Table 11 The following questions are specific to Alcohol drinking habits Practices in particular

1.	Have you ever used alcohol drinks in your life /such as Areke, Tela, Tej (local liquors) beer, and other alcohol drinks?	Yes	No
2.	Have you used any kind of alcohol drinks in the last 12 months?	Yes	No
3.	if you use alcohol ; Have you felt the need to cut down on your drinking?	Yes	No
4.	Have you felt annoyed by criticism of your drinking?	Yes	No
5.	Have you felt guilty about your drinking?	Yes	No
6.	Have you felt the need for an eye-opener in the morning?	Yes	No
7.	If you use alcohol what is your reason to use?		
A	To increase work or academic performance	Yes	No
B	To get relief from tension	Yes	No
C	To combat against exhaustion and hunger	Yes	No
D	Due to academic dissatisfaction	Yes	No
E	To get acceptance from others / to be like others/	Yes	No
F	To be sociable	Yes	No
G	To get personal pleasure	Yes	No
I	specify_____		

Table 12 The following questions are specific to cigarette and other Tobacco products use (habits of Practices)

1.	Have you ever used Tobacco products such as cigarette, wrapped tobacco leaf Pipa and chewable tobacco products (by smoking, chewing, sniffing)?	Yes	No
2.	Have you used any kind of tobacco product in the last 12 months? (By smoking, chewing, and sniffing)?	Yes	No
3.	What was your reason(s) to use tobacco products?		
a)	To increase work or academic performance	Yes	No
b)	To get relief from tension	Yes	No
c)	To combat against exhaustion and hunger	Yes	No
d)	Due to academic dissatisfaction	Yes	No
e)	To get acceptance from others / to be like others/	Yes	No
f)	To be sociable	Yes	No
g)	To get personal pleasure	Yes	No
i)	specify_____		

Table 13 The following three questions are specific to Substances such as Hashish and others

1.	Have you ever used in your life substances / Such as hashish, shisha, Pat, Kaya, Joyint, Hait, Cannabis, Ganja, and or Heroin and others?	Yes	No
2.	Have you ever used in the last 12 months / Such as hashish, shisha, Pat, Kaya, Joyint, Hait, Cannabis, Ganja, and or Heroin and others?	Yes	No
3	If you use the above substances What was your reason(s) to use?		
A	To increase work or academic performance	Yes	No
B	To get relief from tension	Yes	No
C	To combat against exhaustion and hunger	Yes	No
E	Due to academic dissatisfaction	Yes	No
F	To get acceptance from others / to be like others/	Yes	No
G	To be sociable	Yes	No
H	To get personal pleasure	Yes	No
I	specify _____		

ANNEX 2: QUALITATIVE DATA COLLECTION TOOL

JIMMA UNIVERSITY, COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES

Questionnaires for assessment of perceived stress level and associated factors among health Science students at Debre birehane University, North Shoa Zone of Amhara Region

INFORMED VERBAL CONSENT FORM BEFORE CONDUCTING THE COMPLETING QUESTIONNAIRE (GUIDELINE FOR RESPONDENT)

Good morning/ afternoon, my name is ----- and I represent, Jimma University. I am conducting FGD of health science students in Debre birehanev University. The purpose of this FGD is to assess perceived stress level and associated factors among health science students at Debre birehane University. You have been chosen to participate in the interview purposely, if you are involved in quantitative self administered questionnaire. You will help me to give me appropriate answers please; feel free to any questions and to share your opinion concerning the FGD. For the success of this study, your participation is very important. Tape recorder can be used during the discussion because it will help us to remember what you are said during the discussions. The other thing I want to mention is that in any time you have a right to leave the FGD.

Do I have permission to continue?

1. Yes ----- 2. No -----

Thank you very much for your help!

Guideline for FGD to qualitative data collection on perceived stress level and associated factors among health science students at Debre birehane University. 6 Participants with homogenous group will be participated in each FGD. 7 A total of 8 questions are prepared with probing mainly focus on stress and its associated factors.

- ✚ How do you define stress?
- ✚ What do you think about the sources of stress in University students?
- ✚ In what way do these sources of stress make you feel threatened?

- ✚ What do you think about the effect of stress in University students?
- ✚ What do you think about relationship between stress and illness?
- ✚ What are the effects of stress on health and academic performance?
- ✚ What are the factors frequently influencing the perception of stress in University Students?
- ✚ Do you think that being the first from family member to join University affects students stress?
- ✚ Do you think that absence of social support will bring stress?

ANNEX 3. THE MAJOR THEMES THAT WERE IDENTIFIED

- 1) Perceptions of stress
- 2) Sources of stress
- 3) Effect of stress and
- 4) Perceptions of quality of social support