

## Assessment of Perceived Stress Level and Associated Factors among Health Science Students at Debre Birehane University, North Shoa Zone of Amhara Region, Ethiopia

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### 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.

**Conclusion and recommendation:** A higher level of perceived stress was reported by the students. 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 consistently plan suitable activities or programs for the students on managing stress.

**Keywords:** Perceived stress; Debre birehane university health science students

### Introduction

#### 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. 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

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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, overstress 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. 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].

## Statement of the problem

Mental disorders are leading causes of disability worldwide, accounting for one-third of the years lost due to disability. 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 Pierce 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. Stress is a part of a college student's existence and has a profound impact on their ability to cope with college life. 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. Academic institutions have different work settings compared to nonacademic and therefore one would expect the difference in symptoms, causes, and consequences of stress. 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 [15].

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. 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.

## 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. 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 [16]. 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.

## Objective of the study

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

### 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.

## Methods and Subjects

### Study area and period

The study was conducted from February10 – March10 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.

## 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 Deber birehane University.

## Population

### Quantitative study:

**Source population:** All health science students registered in 20012/2013 academic year in Debre Birehan University.

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

## Inclusion and Exclusion criteria

**Inclusion:** Regular health science students who registered from 1<sup>st</sup> to 4<sup>th</sup> year and attend their classes during the study period in Debre Birehane University.

**Exclusion:** Extension, summer and distance education students are not included.

## Sample size determination and sampling technique

### Sample size determination

**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 found 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,

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

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

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,  $\alpha$  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.

**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.

## Sampling technique

**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.

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

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)

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

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

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

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

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

**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  $N_0$  was determined based on the saturation ideas.

## Measurement and variables

### Data collection instrument and procedure

**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) [17], 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.

**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.

## 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 and Income.

**Academic demand variables:** Level of study year, Field of study, Interest to field of study, Cumulative GPA and Adjustment to university classes year.

**Substance related variables:** Use of alcohol, Use of khat, Use of cigarettes and Use of 'hashish'/'shisha' and other

**Psychosocial variables:** Social support, Rank among the family to join university and Relationship with dorm mates or class mates

**Health related variables:** Sleeping difficulty, Physical problem and Quality of food in the University

**Dependent variable:** Perceived stress level

**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.

**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 Cranach'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.

**Data collector:** Four instructors were recruited and participated throughout the data collection and collects the questionnaires.

### Data processing and analysis

**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  $\leq 0.05$  with dependent variable was considered as statistically significant. Results were summarized using tables, figures and graphs.

**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.

### 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.

### 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 Debra biryani 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.

### 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
- Low level stress;** respondents having a PSS-14 score  $\leq 28$  [18].

**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.

3. **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.
4. **Substance use; current users:** when students use specified substance (for non-medical purposes) in the last year.
5. **Ever users:** when students use specified substance (for non-medical purposes) even once in their life time.

### Dissemination of the study result:

- ✓ The result of this study was presented to Jimma University Public Health and Medical Sciences College Graduate School department of Nursing.
- ✓ The dissemination of the study will also for health planners and police makers.
- ✓ A great effort is made to publish in scientific journals.

## Results

### 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%) 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.

### 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.

### 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.

### 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 +1.0.5 and had a range between 1.66 and 4.00.

### 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.

### 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.

### 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.

### Identified Factors Contributing to Perceived Stress Level among Health Science Students

The multivariate logistic regression analysis identified gender, monthly income, social support, and relationship with class mates and dorm mates, and ever uses of substance use a 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 birr 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=0.43, 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)].

### 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.

### 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 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 associated factors causes of perceived stress level among students 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 than 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) [19]. 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 " 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 birr 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. Those students 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.

## Conclusion and Recommendation

### 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).

### 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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