DISSERTATION ON

"A STUDY ON PREVALENCE OF GENERALIZED ANXIETY DISORDER AMONG FEMALE UNDERGRADUATE MEDICAL STUDENTS WITH EATING DISORDER"

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THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY

In Part fulfilment of the regulation for
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THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY,
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APRIL – 2017

CERTIFICATE

This is to certify that this dissertation entitled "**A STUDY ON PREVALENCE OF GENERALIZED ANXIETY DISORDER AMONG FEMALE UNDERGRADUATE MEDICAL STUDENTS WITH EATING DISORDER"** is the bonafide work of Dr. R. Janani in part fulfilment of the requirements of M.D. (Psychiatry) BRANCH – XVIII Examination of Tamilnadu Dr. M.G.R University to be held on April 2017. The period of study is from May 2016 to July 2016.

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DECLARATION

I,Dr. R. Janani, solemnly declare that the dissertation titled "**A STUDY ON PREVALENCE OF GENERALIZED ANXIETY DISORDER AMONG FEMALE UNDERGRADUATE MEDICAL STUDENTS WITH EATING DISORDER"**is a bonafide work done by me in the Department of Psychiatry, Thanjavur Medical College and Hospital during May 2016 to July 2016 under the guidance and supervision of Prof. **Dr. S. Ilangovan M.D**., Professor and Head of the Department of Psychiatry, Thanjavur Medical College, Thanjavur.

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A STUDY ON PREVALENCE OF GENERALIZED ANXIETY DISORDER IN FEMALE UNDERGRADUATE MEDICAL STUDENTS WITH EATING DISORDER

INTRODUCTION

All living things in the world have their basic needs. The basic needs are food, shelter, protection from danger and reproduction. For all the physiological systems to function normally these basic needs are to be satisfied. Primary need for all the other needs to get fulfilled is food.

Of all the living things food intake in human beings has certain unique characteristics. Taking food in excess to the body needs or lesser than required is seen commonly in human beings. The emotional and cultural influence is also unique to human beings only.

The current living situation in most of the countries is majorly dependent on how we look and feel about ourselves and to others too. Majority of the advertisements in the media focuses on appearance improvement. Of this, weight management promotions are one of the leading.

Eating correctly to the body and activity requirements and exercising regularly is essential for leading a productive life. But constant preoccupation with this which affects the function and productivity leads to disorders in eating. The concept of thinness is equal to happiness is very important to this

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INTRODUCTION

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CONTENTS

LIST OF TABLES

ABBREVIATIONS

ED	Eating disorder
GAD	Generalized Anxiety Disorder
AN	Anorexia Nervosa
BN	Bulimia Nervosa
BED	Binge Eating Disorder
BMI	Body Mass Index
EAT – 26	Eating attitudes Test -26
GAD -7	Generalized anxiety rating scale -7
CART	Cocaine and Amphetamine Regulated Transcript
CRH	Cortisol Releasing Hormone
5- HIAA	5- Hydroxy Indole Acetic Acid
OCD	Obsessive Compulsive Disorder
BDNF	Brain Derived Neurotropic Factors
NPY	Neuropeptide Y
CSF	Cerebro Spinal Fluid
MRI	Magnetic Resonance Imaging
CT	Computed Tomography
LNAA	Large Neutral Amino Acids
OFC	Orbito Frontal Cortex
FTO Gene	Fat Mass and Obesity Associated Gene

INTRODUCTION

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All living things in the world have their basic needs. The basic needs are food, shelter, protection from danger and reproduction. For all the physiological systems to function normally these basic needs are to be satisfied. Primary need for all the other needs to get fulfilled is food.

Of all the living things food intake in human beings has certain unique characteristics. Taking food in excess to the body needs or lesser than required is seen commonly in human beings. The emotional and cultural influence is also unique to human beings only.

The current living situation in most of the countries is majorly dependent on how we look and feel about ourselves and to others too. Majority of the advertisements in the media focuses on appearance improvement. Of this, weight management promotions are one of the leading.

Eating correctly to the body and activity requirements and exercising regularly is essential for leading a productive life. But constant preoccupation with this which affects the function and productivity leads to disorders in eating. The concept of thinness is equal to happiness is very important to this generation and that is affecting them a lot.

Fatness is now associated with ugliness and the body image is determined by what is portrayed in the media, mainly the fashion world.

Eating disorders are a group of psychological disorders in which there are disordered and abnormal patterns of eating.

The characteristics of eating disorders are the follows:

i. Abnormal increased or decreased amount of food intake.

ii. Abnormal perception of body image.

iii. Presence or absence of compensatory behaviour to regulate calorie content.

iv. Fear of gaining weight or becoming fat.

v. Eating sudden large binges of food rapidly.

vi. Preoccupied with thoughts about food and nutritional value of food.

vii. Physical symptoms secondary to this behaviour

viii. Commonly this disorder is ego syntonic and the patient does not go for medical help or reveals the above abnormalities to anyone. So most of the florid cases come to the attention of professional help in the later stages only.

Eating disorders are multifactorial interplay between genetic, personality, psychological factors, familial factors and the cultural background.

Eating disorders start with harmless practices like preoccupation with healthy life style, calorie regulation, dieting and exercising regularly. When this

intensifies and becomes consumes the person's time, physical health and their socio occupational performances, it becomes a serious disorder.

The current classification of Diagnostic and Statistical Manual of Mental Diseases, Edition 5, classifies following disorders as Eating Disorder syndromes. They are – Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder [1]. They come under the Feeding and eating Disorders which also includes Pica, Rumination Disorder and Restrictive food intake Disorder under Feeding Disorders.

Anorexia Nervosa is characterised by decreased food intake than the body requirement which leads to low body weight for the individual's height, weight and sex. The weight is very much less than the low normal. There is also intense fear of gaining weight and behavioural persistence constantly focused in maintaining the weight or loses more weight. There is also disturbance in the perception of one's own body size[2].

Bulimia nervosa is characterised by binge eating of a large quantity of food in a very short time interval (2 hours) and the individual does not have control over this. This is usually followed by compensatory behaviours like laxative use, self-induced vomiting, fasting and strenuous exercise[2].

In Binge eating disorder the above said features are present along with rapid eating, uncomfortably filled with food, eating when not hungry, mostly eating alone due to embarrassment and feeling very much distressed afterwards. This syndrome is not associated with compensatory measures as in Bulimia

Nervosa[2]. Approximately 90% of patients with eating disorder are females[9]. Anorexia Nervosa is a rare disorder. Worldwide prevalence in females is 0.29% [3]. The prevalence of Bulimia Nervosa in females is 1% [3]. Prevalence of Binge Eating disorder is 3% of adults as a whole [5]. In females the prevalence rate is 2.5 to 4.5% [5].

There are certain comorbid psychiatric abnormalities associated with eating disorders. Most common of them are depression (45 to 86% prevalence)[6], anxiety disorders (64% prevalence)[7] and personality disorders (58% prevalence)[8]. The overall prevalence of GAD is 3 to 8 % [11]. Among anxiety disorders the most common is phobic disorder. Next comes Generalized anxiety disorder – prevalence is 14% in restrictive type of Anorexia Nervosa, 11% in Binge eating and Purging type of Anorexia Nervosa and 50% in Bulimia Nervosa [10].

This study is focussed on assessing the prevalence of comorbid Generalized Anxiety Disorder with eating disorder among the female students undergoing undergraduate medical course in Government Thanjavur Medical College. By implementing this study, the eating attitudes of these students, comorbid generalized anxiety and the severity of anxiety can be assessed and the students who have abnormalities in these assessments can be referred for expert help and management. The students also get the awareness about the abnormalities in eating attitudes which will help them in dealing such cases in their future medical practice.

AIM AND OBJECTIVE OF THE STUDY

AIM AND OBJECTIVES:

1. To assess the prevalence of Generalized Anxiety Disorder among students having abnormal eating attitudes, thereby probable eating disorders.
2. To compare with the various socio demographic variables with disorders in eating attitudes and generalized anxiety disorder.
3. Assessment of severity of anxiety in students having Generalized anxiety along with disordered eating attitudes.

HYPOTHESIS OF THE STUDY

HYPOTHESIS

There would be significance in correlation between the socio demographic factors present in the semi structured proforma, BMI and age with the significant scoring in EAT 26 and GAD -7 scale.

The prevalence of Generalised anxiety in Eating disorders (abnormal eating attitudes) in the undergraduate female medical student will similar to the Global or the Indian range.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Epidemiology of Eating Disorders:

Epidemiology is defined as the determinants and distribution of health related events [11].

Global Scenario:

Eating disorder and disordered eating habits are present in 1 in 5 women[12]. Nearly 70 million people worldwide are affected by this illness[13]. Women are affected much more when compared to men. About 90% of eating disorder patients are females in the age group from 12 to 25 years of age[14]. About 11% of high school students are affected by Eating Disorders [15.] In the United States of America, nearly 15% of women who are not diagnosed with eating disorders displayed abnormal attitudes and patterns of eating behaviour[16].

The most common abnormal behaviour in these individuals is Dieting. Dieting industry is a huge one and nearly 50 billion dollars are earned by the overall dieting enterprises in the world [17]. About 35% of the normal dieting community progresses to pathological dieting and 20 to 25% of them, to full blown eating disorders[18]. Approximately 91% women in college attempted dieting at least once [19].

Modelling, fashion trends and movies lead to a body image of being very much thin than desired in healthy females. An American study revealed that an average 5 feet 4 inches woman weighs 140 pounds (63.50 kgs). But a model of height 5 feet 11 inches weighs only 117 pounds (53.07 kgs) [20].

The mortality rate among women with eating disorder is significantly higher than the women of the same age group. Women suffering from Anorexia die nearly 12 times more than the women who don't suffer from the same [21]. About 10 % of persons die in the first ten years and this doubles in the next 10 years. Only about half of the patients who are diagnosed of anorexia are cured. Rest of them die or suffers till the end by this tragic illness [22].

A study conducted in university medical students in China from 2006 to 2008. It was a cross sectional study. The symptoms such as perception of body image, disordered eating, depression and anxiety were taken into account. There were about 1.135 participants, in 2006, number of persons suffering from anorexia nervosa was nil and number of persons suffering from Bulimia nervosa was 1 (0.90%). At 2008 this gradually increased to 1.44%, i.e., Anorexia nervosa – 1 male and bulimia nervosa 1 male and 3 females) [23]. But the levels of at risk eating attitudes were much lower, 2.71% than the other studies compared. The prevalence of abnormal eating behaviour was also seen in the students who showed features of anxiety and depression.

In a review paper of various studies held in Bahrain, Quwait, Quatar, Oman, Saudi Arabia and UAE. Women were more affected than men. Both overweight prevalence as well as rate of increase in weight is higher in these countries. Obesity in preschoolers was found to be high (8%). Due to the development in the socio economic status of the Arab countries, there has been a drastic changes in eating habits and prevalence of eating Disorders [24]. There is also a drastic increase in metabolic syndromes secondary to this issue.

About 530 students were analysed from 2 public and 2 private universities in Kuwait. Both males and females were included in the study. Results were obtained by 2010. Disorders in the General eating attitudes were seen in 31.6% males and 33.8% females [25]. Obese students who involved in this study showed double the increase in the rates than the non obese individuals. Since both male and female students were assessed in this study this study had more value regarding the results.

Another study held in Karachi, Pakistan from January to June 2011. A sample size of 435 medical students from 2 medical universities were approached with two scales (EAT 26 and SCOFF) to assess their eating attitudes, which if changed will probably lead to full blown eating disorder in the near future. According to EAT - 26, 22.75% of individuals had abnormal eating attitudes and according to SCOFF, 17% had the same [26]. This study was

initiated by seeing medical students are one of the high risk populations and the treatment and management are easily accessible near them.

Other Psychiatric Illnesses may also be a predisposing factor in eating disorders. By far depression and anxiety are the most common psychiatric illnesses associated with eating disorder. In Malaysia, 206 female medical undergraduate students were approached. About 65.5% of students were depressed and 6.3% were susceptible to eating disorders. A positive relationship was seen between eating disorder and depression. A gross negative relationship was seen between eating disorders and body image as well as depression and body image [27]. They further studied that the treatment of body image dissatisfaction and depression improved the eating attitudes of the students there. Though depression was an effective mediator it contributed only partially for the development of this disorder. Other factors like cultural backgrounds, the individual's personality and peer group pressure and their values about eating practices also influenced it.

As already discussed, the intention of dieting and fitness is directly proportional to a tendency to develop eating disorder. A study conducted in 231 Iranian female medical students revealed that 21.6% of them had abnormal eating patterns and there was a positive correlation between abnormal eating patterns and fitness intention [28].the students who showed high obesity had high

fitness intension. The obese individuals are more ready to involve themselves in dieting programmes and fitness regimes.

Weight suppression is the main concept in women suffering from Bulimia Nervosa. It is defined as the difference between highest weight of the patient and the current weight she is. It mainly attributes to compensatory bulimic behaviours, dietary restrictions and shape as well as excess weight concerns [29]. A sample of 85 students was studied from the period of 1999 to 2014 in Chicago University. This revealed average weight suppression was 0.75 standard deviation (9.4 kg) [30]. In this study the sample students having greatest weight suppression have more chronic and severe form of eating disorder. The persons with high weight suppression and high Body Mass Index had high bulimic symptoms. So this study signifies the concept of weight suppression in the pathology of eating disorders.

Associated psychiatric disorders are common in eating disorders. They may occur prior to illness, sometimes predisposing the eating disorders. Sometimes may occur along with eating disorders or may be secondary to it [31]. Depression and anxiety are the most common psychiatric illnesses with eating disorders. Depression may occur due to the chronicity of the illness and cognitive deficits due to nutritional impairments [32]. Anxiety may generally predispose the individual to eating disorder [33]. Even when the patient is treated and apparently cured of the illness, anxiety would still persist in the long run [34].

One study demonstrated that there is high level of anxiety among anorexia patients and after recovery, it got lowered but still remained higher than healthy controls [35]. According to a study among female students in south eastern American university, Personality assessment was done in patients with eating disorders. Anorexia nervosa and bulimia nervosa showed high scores in anxiety and schizophrenia scales in the personality assessment inventory [36].

In another study there was a positive correlation between eating and anxiety disorder or both, in adolescent having family conflicts, low family affection and impaired parenting [37]. A sample of 221 children were recruited from Perth primary school and interviewed 3 times (currently, after one year and after two years). There showed link between family functioning, pressures from parents, deficits in parental control, discard by the parents, drastic changes in the family structure results in eating abnormalities in the young population. Eating disorders in mother also resulted in early onset of eating disorders and abnormal eating patterns, perhaps in the childhood itself. The satisfaction towards the family functioning and maternal education also influences the eating attitudes. Current eating disorders in the mother, maternal concern about the weight of the child, family relationships, parenting style, exposure to stressful events in the family, maternal self esteem, child psychological functioning, sociodemography of the family and the body mass index of the mother and the child are the other factors taken into consideration.

In a study body mass index and the percentage of body fat was measured in 445 whites and 242 Asian participants. There were also considerable variations between presentation of eating disorders in Western and non- western populations [38]. In women with same BMI, there were increases body fat content in Asian women when compared to those in the western countries [39]. But body image disruptions were similar between several populations inspite of differences in the cultural backgrounds [40].

Indian Scenario:

Although the exact prevalence and incidence of eating disorders in Indian scenario is not precisely known, this illness is lately increasing in the Indian population [41]. A retrospective study was conducted in Psychiatry patients for nearly 6 years duration. It revealed 1.25% of the sample was affected with eating disorders [42]. The Indian population, especially women did not show the typical features as in the western population - fearfulness of fatness, fearfulness of weight gain and distorted body image [43].

But gradually, due to the exposure to the western culture in certain section of Indian population, have lead to the appearance of disturbance in body image and fear of becoming fat [44].

A comparative study was done between female patients having eating disorders in India and Australia. About 30 cases in a private clinic and 30 inpatients and 30 outpatients from a private clinic were taken as samples. Both the populations were matched in relation to their age, sex, height, weight and

BMI. Indian patients, in relation to the Australian inpatients, wanted a higher body mass index. But this was reverse in regard to the Australian out patients. Binge eating was more in the Indian patient group. In contrast to the expectation that the Indian women would score better in the Global Quality of life, they scored similar to the Australian women. But they differed from the Australian women in eating Disorder related thoughts like preoccupation of food, food controlling their life, eating practices and their body shape [45].

In India, in contrast to the western society there are various protective factors which prevent Eating disorders. The biological factors, socio cultural factors and the family involvement in maintaining adequate health and nutrition for each individual were the protective factors [46]. Healthy body represented good family care and nurturing [47]. The imitation of western culture and the Size Zero Fad have lead to disturbance in the above said protective disorders and have lead to Eating disorders in the Indian Population too. Limitation in the research activities in relation to this illness have also resulted in the lack of knowledge of the actual burden this illness is posing on Indian population [48].

Most of the studies conducted in India relied on self reporting questionnaires and scales. Due to the Western orientation of the self reporting tools and the variation in the understanding of them by the Indian Population, the reliability of them was questionable [49].

In another Indian Study 210 medical students were taken as sample. None of them were diagnosed with eating disorder, but nearly 15% of them had subthreshold pattern of illness which was labelled Eating Distress Syndrome [50].

In a study conducted in 504 students in Northern states of India revealed 0.4% suffered from Bulimia Nervosa [51].

A retrospective study was done in individuals less than 18 years of age attending the Child and Adolescent psychiatry at Christian Medical College at Vellore in Tamilnadu. Study was conducted from 2000 to 2005. Only six cases (14.6%) were diagnosed with Anorexia Nervosa. The percentage of people affected with comorbid psychiatric illness was 43.9%. Most common psychiatric disorder was mood disorder (27.8%) [42].

Another study was done in 150 girls in affluent suburbs in Delhi. This study revealed dissatisfaction in their current weight by 96% of them who are obese, 88% of them who are normal weight and 32% of them who are underweight. Characteristically even the underweight and normally weighing individual needed to reduce 5 to 16 kilograms [52].

In another study 5 patients presented were diagnosed with eating disorder but did not have distorted body image or desire to be thin or fear of fatness [53].

Most of the studies conducted in India are in the form of case reports and chart reviews. Recent studies are focused on the population epidemiology and they revealed the presence of considerable concern in weight, mainly in the student population.

History of Eating Disorders

History is the systematic and continuous narration or study of past significant events which are arranged in chronological order in order to give a timeline for the events.

Importance of history:

Describing and knowing history for any disorder is very important because the evolution of the knowledge of the disease, its modifications through time, perception of the various populations regarding the disease, variation of presentation of the disease over the time and the evolution of the efforts of various personalities in knowing the aetiology, pathogenesis, framing the diagnostic criteria and treatment of the disease can be followed by knowing it. This is important for anyone to understand well about the disease, its prognosis and treatment of the disease.

In Indian mythology, as illustrated in Kambaramayana, Kumbakarnan, brother of Ravana showed insatiable appetite sleep and sexual activity. This apparently signified a hypothalamic disorder resulting in eating disorder similar to binge eating.

Anorexia Nervosa:

Catherine of Siena in Fourteenth Century induced self starvation in the name of piety and purity. The church conducted routine prayers for her to regain her appetite but it did not work out[54]. Pedro Mexio wrote about the French Fasting Girl of Confolens.

Richard Morton as early as 1689 described an Eighteen year old girl who suffered from amenorrhoea and self induced restriction of food intake. The girl died eventually and Morton described it as 'Nervous consumption'. The case of Timothy Dwight instructor in Yale College was described by Noah Webster in 1774.

Anorexia nervosa was named as early as Nineteenth Century. Both in England and France, Sir William Gull and Charles Lasegue, respectively, nearly simultaneously described a series of cases of excessive weight loss and psychological disturbances. Sir William Gull named it as Anorexia nervosa and Charles Lasegue named it anorexie hysterique.

In 1985, Bell described fasting and ascetism by certain saints of medieval times may be the manifestation of Eating Disorder.

The popularity of this illness increased by 1878 when Hilde Bruch published her work The *Golden Cage: the Enigma of Anorexia Nervosa*. A popular singer Karen Carpenter died out of this illness in 1983, which lead to an extensive media coverage about this illness.

In the history of Anorexia nervosa changes in cultural norms played an important role in the frequency of this illness.

Bulimia Nervosa:

The record of Greek soldiers purging themselves as early as 370 BC is the available earliest record of this illness. Emperors like Claudius and Vitellius of ancient Rome followed periodic purging after attending extensive banquets

and dinners. As already discussed many saints had characteristics of Anorexia nervosa, along which they also had frequent purging of food in order to expel the evil spirits. As early as 1920s there were records of admissions of Bulimia patients in Mayo Clinic at Minnesota. A patient called Ellen West reported by Ludwig Binswanger described the character of excessive thyroid tablets intake, periods of excessive eating with purging and vomiting was present. The characteristic raise of bulimia nervosa began at the 1970s and 1980s. It featured mainly binge eating and purging type characteristically. Gerald Russell published an article which portrayed the classical features of Bulimia nervosa in 1979. The DSM III included this disorder in 1980.

Binge eating Disorder:

The Binge eating without purging was described by Stunkard in 1959, mainly in the obese individuals in his paper 'Eating Patterns and Obesity'. In 1987 the Diagnostic and statistical manual from APA described binge eating for the first time but under the title of Bulimia Nervosa. In 1994 in DSM IV it was described as Eating disorders not otherwise specified. Described nearly 20 years before bulimia nervosa, the Binge eating disorder was included as a separate illness only in DSM IV TR (2000).

Classification of Eating Disorders and Generalized anxiety Disorder

Classification of mental disorders is otherwise called as nosology or taxonomy of psychiatric disorders.

Classification in any illness is important to establish a clearcut diagnosis for effective management of the disorder and also for the prevention of further episodes of the particular illness from occurring in the future.

Classification of illnesses in psychiatry falls under two main categories

i. The International Classification of Diseases (currently 10th edition) by the World health organization

ii. The Diagnostic and Statistical manual of Mental disorders (currently 5th edition) by the American Psychiatric Association.

These classifications are based on value judgements, objective and scientific evidences.

Other schemes of classifications

i. Chinese Classification of Mental Disorder

ii. Latin American Guide for Psychiatric Diagnosis

iii. Research Domain criteria from National institute of Mental Health

These schemes are not widely used for clinical diagnosis and treatment. The most widely used classification systems are the ICD 10 and DSM V.

A. Classification of eating disorders

1. ICD – 10 classification of eating disorders:

Eating Disorders in ICD-10 included two important disorders – Anorexia Nervosa and Bulimia nervosa. Along with them overeating and vomiting with psychological disturbances was also included.

F.50.0 – Anorexia Nervosa:

Characterised by persistent weight loss which is induced and sustained by the patient. Affects mainly adolescent and young women and rarely male gender. Clinical features are easily recognisable and often continues to remain in a chronic form after recovery.

i. Body weight less than 15% of the required weight and Quetelet index less than 17.5.

ii. Loss of weight is self induced.

iii. Presence of body image distortion.

iv. Endocrine abnormalities – amenorrhoea, lack of sexual interest, lack of potency, increased growth hormone levels, increased cortisol level, thyroid abnormalities and abnormal insulin secretion.

Puberty is late or sometimes even arrested.

F. 50.1 – Atypical Anorexia nervosa:

Absence of one or more key features of Anorexia nervosa or presence of all features in a milder degree.

F. 50.2 – Bulimia nervosa:

There is repeated over eating and there is also excessive preoccupation on weight that leads to compensatory behaviours like self induced vomiting, purging and use of drugs to reduce weight. Age of onset is bit later than that of Anorexia Nervosa but they share the same psychopathology. Leads to secondary problems like electrolyte imbalance, seizures and cardiac arrhythmias.

i. Preoccupation with eating and craving for food. Overeating is present.

ii. Counteracting activities like vomiting, purgatives use, periods of starvation and use of drugs to reduce weight or to suppress appetite.

iii. Fearfulness of becoming fat and considering a sharply defined weight as an ideal one. The ideal weight is well below the normal weight required for that age group or height. A history of an episode of anorexia nervosa may be present

F. 50.3 – Atypical Bulimia Nervosa:

One or more key features of bulimia nervosa is absent. Even the persons have normal or even excessive weight along with periods of overeating with compensatory behaviours.

F.50.4 – Overeating associated with other psychological disturbances:

Reactive obesity followed by various psychological events like bereavement, accidents, surgery and emotionally distressing events.

F.50.5 – Vomiting associated with other psychological disturbances:

Psychogenic hyperemesis gravidarum and psychogenic vomiting

F. 50. 6 – Other eating disorders:

Pica of non organic origin and psychogenic loss of appetite.

F50.7- Eating Disorder, unspecified.

2. DSM V criteria for Feeding and Eating Disorders:

Pica:

i. 1 month of eating non food or non nutritious substances.

ii. Inappropriate to the development level of the person.

iii. Not a socially normal or culturally supported

iv. When it is associated other medical conditions (intellectual development disorder, autism spectrum disorder, and other medical conditions) it should be severe enough for medical attention.

Rumination Disorder:

i. For 1 month of duration there is repeated regurgitation of food.

ii. Not associated with GIT or other medical condition.

iii. Not associated with anorexia nervosa, bulimia nervosa, binge eating disorder or avoidant/ restrictive food intake disorder.

iv. When it is associated other medical conditions (intellectual development disorder, autism spectrum disorder, and other medical conditions) it should be severe enough for medical attention.

Avoidant/ Restrictive food intake Disorder:

i. Failure to complete the appropriate nutritional and energy needs of an individual. Characterised with significant loss of weight, presence of

deficiency of nutrition, dependence on other modes of feeding (enteral or nutritional supplements) and interference in normal functioning.

ii. Not linked with unavailability of food or cultural practice.

iii. Not associated with anorexia nervosa, bulimia nervosa and body image distortion.

iv. Not attributed to other medical or psychological disorder. When it is associated with the same the severity is very assistance in feeding.

Anorexia Nervosa:

i. Failure to meet out energy requirements that leads to a low body weight that is minimal than the expected.

ii. Excessive fear of gaining weight and behaviours to reduce weight in spite of being low weight.

iii. Body image distortion.

Bulimia nervosa:

i. Repeated binge eating episodes characterised by eating a large amount of food in a time span of less than 2 hours. The amount of food is significantly very high than most people eat at that time span. There is also a sense of lack of control of this binge eating.

ii. Compensatory behaviours are present – laxative use, self induced vomiting, other medications that promote weight loss and periods of excessive exercise or starvation.

iii. These two characteristically occur on an average of one week in 3 months span.

iv. The self evaluation of the individual primarily depends on ones weight and shape.

v. Not occurs during the episode of anorexia nervosa.

Binge eating Disorder:

i. Repeated binge eating episodes characterised by eating a large amount of food in a time span of less than 2 hours. The amount of food is significantly very high than most people eat at that time span. There is also a sense of lack of control of this binge eating.

ii. These episodes are associated with 3 or more of – much rapid eating, continue till one feels uncomfortably full, large amount of food consumption when one is not hungry at all, embarrassment that leads to eating alone and this is followed by disgust on oneself, depression and guilt due to this habit.

Other Specified Eating disorders:

i. Atypical Anorexia nervosa: All the features of anorexia nervosa are met. But the weight of the individual is within or above the normal range.

ii. Bulimia nervosa of low frequency and/ or limited duration: All criteria are met but the compensatory behaviour occurs less than once a week or less than 3 months period.

iii. Binge eating disorder of low frequency and/ or limited duration: All criteria are met but the binge eating behaviour occurs less than once a week or less than 3 months period.

iv. Purging disorder: Recurrent purging (vomiting which is self induced or laxative or other medication use) to maintain the weight as well as the shape in the absence of binge eating.

v. Night eating Syndrome: Excessive eating as soon as one is awake or at the evening times which the person recall and aware. Not explained by other factors like the altered sleep wake cycle and causes distress and functional impairments. Not attributed to binge eating disorder or other medical condition or effect of any medications or substance use.

Unspecified Feeding or eating disorders:

These are the feeding and eating disorders that leads to distress and functional impairment in an individual but does not meet the full criteria for any of the specified disorders. It can also be used to finalise a diagnosis when the

information of an individual is not sufficient to conclude any of the specified disorders.

In the ICD **11** classification following changes is to be recommended to be proposed with regard to Eating disorder:

a. Feeding and eating disorders are to be merged and will be applicable for the diagnosis in all age groups.
b. In anorexia nervosa, exclusion of amenorrhoea in the diagnostic criteria, to include any significant underweight and to extend cognitive criteria by giving importance to the behavioural and cultural factors.
c. To include subjective binge eating in bulimia nervosa.
d. To include a category 'very dangerously low body weight' to emphasise the severity of Anorexia nervosa.
e. To include subjective and objective binge eating disorder without compensatory behaviour.
f. A new category inclusion, called as the combined eating disorder which includes both anorexia nervosa and bulimia nervosa.
g. Inclusion of avoidant / Restrictive food intake disorder with no body weight changes as well as perception disturbance of the body image.
h. Minimizing the duration of illness to 4 weeks.

B. Classification of Generalized Anxiety Disorder:

1.ICD – 10:

Generalized anxiety disorder comes under the Neurotic, stress related and somatoform disorder.

It comes in the F. 41 group – Other Anxiety disorders. It is coded as F.41.1 in the ICD 10 classification.

Anxiety is a predominant feature but it is not restricted to any particular situation. There is continuous presence of symptoms like muscle tension, nervousness, tremulescence, light headedness, palpitation, dizziness, sweating and gastro intestinal symptoms. There is constant fear of something bad is going to happen in the near future. Occurs more commonly in women. The symptoms are fluctuating and usually chronic in its course.

Diagnostic guidelines:

Following symptoms must occur at least over several weeks, mostly over duration of several months at a time.

a. Apprehensive features – always on edge, bad forth comings in the future, impaired concentration, etc.,
b. Feelings of motor tension – inability to relax, constant fidgeting, trembling, etc.,
c. Overactivity of the autonomic system – dizziness, dry mouth, palpitation, tachycardia, tachypneoa, epigastric discomfort, sweating, etc.,

When present in children, constant reassurance that everything will be alright is required and there may also repeated somatic complaints.

Patient can have transient depressive, phobic or obsessive compulsive symptoms. But these conditions must not meet out the full criteria for their diagnosis.

Also includes anxiety neurosis, anxiety reaction and anxiety states.

DSM – V:

A. Apprehensive Expectation for at least 6 months about a number of events or activities
B. Difficulty in controlling the worry
C. The anxiety and worry are associated with three or more of the following symptoms
    1. Restlessness and feeling constantly at edge
    2. Being easily fatigued
    3. Concentration impairment and mind going blank.
    4. Constant irritability
    5. Increased muscle tension
    6. Disturbances in sleep
D. Impairment in social, occupational or other functions.
E. Not due to the effect of substance or physical illness.
F. Not explained by other mental illness.

Neurobiology and Phenomenology of Eating Disorders

Hunger is the physiological need to have food, whereas appetite is the desire to eat foot which is not dependent on the physiological needs of the body. When the desire to eat is very much intense that it is difficult to control and results in a very much increased food consumption as soon as opportunity arrives is called craving for food.

The main centre for hunger is the hypothalamus. It is found below the thalamus. It is almond shaped and it is a part of the limbic system in the human brain. It serves mainly as an important bridge to the nervous system and the endocrine system of our body, mediated by the pituitary gland.

In the various nuclei present in the hypothalamus, the lateral part of hypothalamus is responsible for the physiological basis of hunger and satiety.

It contains the important structure called as the Orexogenic nucleus. This projects extensively throughout the brain and modulates various physiological activities. This secretes orexins which modulates the secretion of leptin, ghrelin and endo cannabinoids.

Two main hormones that are involved in hunger and satiety are ghrelin and leptin respectively. Leptin is secreted from the adipose tissues of the individual and suppress the release of Neuro peptide Y that in turn inhibits orexins from the lateral hypothalamus. Orexins are agents for hunger and appetite. Leptin also increases the genetic transcription of cocaine and amphetamine regulated transcript (CART). But it is regarded as the action of

leptin is mainly optimal in food deprived states rather than well fed states. Ghrelin is secreted from the stomach that in turn increases hunger by reverse mechanism.

The stretch receptors from the walls of the gastrointestinal tracts also inhibit hunger via the vagal nerve fibres. Increased blood level of glucose, amino acids as well as fatty acids inhibits hunger.

Insulin and cholecystokinin inhibits hunger. Glucagon and epinephrine in turn stimulates hunger.

Psychological processes that influence the intake of food are classified under two concepts. They are liking and wanting of the particular food. Liking refers to the intrinsic property of the food as such, like the taste, quality and palatability of that particular food. How much ever the food is tasty, repeated consumption of the same food decreases the liking of that food.

There are also other concepts that influence the behaviour of eating, like the set point theory in which the body mass as well as the energy requirement is set in a higher level than the requirement and the individual becomes hungry when this particular set point is crossed. Individuals who are obese are liable to have higher set points than the requirements.

Wanting is the motivational drive related to the particular type of food. This phenomenon is related to the memories linked with the food, thoughts about the food and emotions linked with the food. Wanting can also decrease with repeated consumption of that particular food.

Some times food intake is associated with activation or the reward pathways of brain and may result in excessive consumption of a particular food or related components. Food may also serve as an anti depressant and anti anxiety agent due to this.

Food also serves as a Positive incentive which indicated the motivation to eat due to the anticipated pleasure of eating. This may also due to the evolutionary instinct to have more food when its available in abundance because in the prehistoric periods availability and procurement of food is always a challenge.

The pathogenesis of eating disorders is very poorly understood [55]. In Anorexia nervosa there is egosyntonic suppression of appetite but the appetite is not entirely absent. There are several ritualistic behaviour in the eating habits of the individuals. In Bulimia nervosa there is an irresistible drive to eat. But there is extreme distress and distortion of body image. But common features of all the patients with eating disorders are restrained behaviour of eating and impaired cognition in regards to weight and shape.

Excessive restlessness and motor activities are present in these individuals [56]. Due to the ego syntonic nature of this illness the patients are very resistant to treatment [57].

There are increased rates of anxiety and depression in these individuals [58]. In Anorexia nervosa of restrictive type there is high constraint, persistence, traits of avoidant personality disorder, constriction of affect, constriction of

emotional expressiveness and reduced social spontaneity. In Bulimia nervosa there is sensation seeking, high impulsivity, novelty seeking and association with borderline personality disorders [59].

As far as cognitive deficits in this illness, they have impairment in set shifting. In Anorexia nervosa there is no problem in focussing in a goal directed activity but they have problems in modifying and redirecting those behaviour. They do not tolerate any mistakes during learning process and they fail to perceive and incorporate environmental affective and social stimuli [60].

Malnutrition can be a cause or sequence of eating disorders. Several studies have shown recently that the childhood presence of certain characteristics like perfectionism, OCD personality and anxiety (social phobia) [61, 62]. These premorbid behavioural traits would be enhanced by malnutrition, not essentially cause it. Even of the recovery of eating disorders these traits and temperament may persist and may lead to relapse or continuous illness in subclinical form or treatment resistance [63].

The age of onset is adolescence because of the dramatic changes that occur biologically, socially and environmentally. This creates a problem in individual who are rigid and inflexible and makes them vulnerable to this illness [64]. Females are more prone to illness since during puberty it is hypothesised that estrogen act as the contributing factor. Since estrogen modulates secretion of serotonergic and secretion of cortisol releasing hormone. The emotional process

of cognition comes into form by pruning and synaptogenesis during adolescence[65].

In the brain there may be abnormalities in the circuits involving eating, mood, temperament and obsession. Disturbances in proprioception may lead to body image distortions [66].

Abnormality of hormonal secretion (cortisol, gonadal, thyroid and growth hormone) may secondarily due to the various neuropeptide disregulation in the CNS. There may also interaction between the peripheral system and the neuropeptides [67]. There is altered level of CRH, beta endorphins, NPY and leptin in the CSF. These may be become normalised after the individual recovers [68]. Various systems that modulate eating disorders are yet to be analysed and finalized. Genetic studies have also attributed the involvement of various system alterations mainly melanocortin and cannabinoids [69, 70].

As far as the neuropeptides are concerned serotonin dysregulation results in depression, anxiety, obsession and poor impulse control. This problem occurs during and also after the recovery of eating disorder. Anorexia nervosa and bulimia nervosa patients tend to have high concentrations of 5-HIAA in the cerebrospinal fluid than the normal population. They show abnormal serotonin challenge tests [71] as well as altered platelet binding to paroxetine [72].

Carbohydrates in the diet increases tryptophan in the body, which is the precursor for serotonin. Proteins in turn reduce the plasma concentration of tryptophan by increasing large neutral amino acids (LNAA) such as valine,

tyrosine, leucine, phenylalanine and isoleucine. Anorexia nervosa affected women shows decrease in tryptophan [73]. The anxiolytic effect of dieting in eating disorder is attributed to reduced tryptophan which results in decreased serotonin. Serotonin has a potential to induce anxiety[74].

As far as dopamine is concerned level there is altered kevels of dopamine in the striatum and lowered concentration of it in the cerebrospinal fluid [75]. This may remain so after recovery also. The dysfunction of anteroventral part of the stratum and the distal part of the caudate results in decreased food ingestion [76], disturbed executive function, altered system of reward, altered affect, disturbances in decision making and stereotypic motor activity.

CT Imaging studies of brain revealed cerebral atrophy and dilation of ventricles in Anorexia nervosa patients [77] and this is present in bulimia nervosa patients as well but is less pronounced than the former [78].

MRI imaging revealed increased CSF volume and deficits in grey as well as white matter volume in Anorexia nervosa [79]. Bulimia nervosa also revealed decreased cortical mass in MRI studies [80]. Sometimes there is restoration after recovery or the alteration persists after recovery.

The distinct feature of eating disorders, especially Anorexia nervosa, inspite of thinness and emaciation the person sees oneself as fat. It may result due to classical neglect, which is carried out by parietal, frontal and cingulated gyrus. The right parietal cortex is predominant in experiencing body image distortions. In a study conducted in normal persons who were exposed to two

computer generated distorted image of themselves as well as one image of another person, there was hyper reactivation in frontal visual and attention system, inferior parietal lobule and anterior part of the intra parietal sulcus [81]. Perception of self in the external space had been long known as right parietal function and recently 'being an agent of a person's own action' has also been found out as the function of the same [82].

When patients with anorexia nervosa are exposed to food there is abnormal activity in the insula, orbitofrontal cortex, mesial temporal, parietal and anterior cingulate cortex [83]. There is activation of temporal regions that may lead to increase anxiety when exposed or eats food. After this anxiety provocation there is activation amygdala that implies the emotional significance of the stimulus [84].

The primary taste cortex is in the insula and the frontal operculum, has a representation other than taste, the Reward value. There is also representation of these centres in the OFC that may also have a hedonic value. So there is overlapping of sensory and affective components of taste resulting due to the allotment of value of food rewards by the insula and OFC [85].

Eating disorders like the other psychiatric disorders have very strong genetic background and predisposition. Both phenotypic and genotypic characteristics are shared and sometimes this sharing follows a pattern, each pattern signifying a specific category of eating disorder. The studies which

revealed these correlates are family based case control and specific gene candidate study.

Targets associated with these disorders are – dopaminergic, opioid, serotonergic, cannabinoid neurotransmitters. The important appetite regulatory peptides are also subjected to genetic alterations which may lead to these disorders. They are melanocortin, leptin , Agouto related protein and ghrelin.

Other genetic factors may affect the energy balance like the protein uncoupling. There are also specific genes implicated for obesity such as FTO gene. Sex hormones genetic abnormality in the whole pathway of synthesis, storage, target action and their reuptake also influenced by the genetic alterations and thereby eating disorder. There are polymorphisms seen in 5HT2A and BDNF genes also.

Linkage analysis reveals 1p33-36 for AN, 1q31.3 for quantitative behavioural traits related to anorexia and 10p14 for BN. Micro satellite markers have revealed loci of 1q41 and 11q22 for anorexia nervosa [86].

Future directions in eating disorders:

More systematised and methodological studies for eliciting the risk factors in the prospective orientation is essential. This can be achieved by larger sample number, longer periods of follow up, onset prediction, interviewing

increased number of informants and experiment conduction to establish the risk factors and etiological factors [87].

Prevention programmes which focused on more universal population did not give the desired reduction in this illness in the follow up period. Sometimes only certain aspects of the disease had been focused and their effects controlled. So these preventive studies must focus mainly on population with higher risk (Target population) for reduction of the burden of this disorder epidemiologically [88].

Majority of programmes target body image perception as the main target. But the other factors which are also important must be targeted (example negative affect) [89]. Evidence based prevention programmes must be given much preferences in order to make further progress in the control of this illness [90].

Separation of services given to the children and adolescents from those that of the adults is necessary. A systematized approach from the primary, secondary and to the tertiary health care which starts from the existence of risk factors, life style modification, identification of the earliest symptoms of the disease and apt management depending on the individual must be taken into account.

Neuromodulation techniques are now under extensive evaluation that makes understanding of the neurobiological mechanisms of eating disorders as well as future drug targets in the neurobiological levels. The neuromodulation can be

very much beneficial such that it can boost the effects of psychotherapy done to the patients [91].

Recent digital advances like the computer generated graphic environments – Virtual Reality is also holding a promising trend in the future to treat eating disorders[92].

Eating disorders in the childhood phase of life, mainly manifests as childhood obesity. Parents awareness about healthy body image, the extent of which its importance to be implied on the children and the parents own perception in those concepts must be dealt in the primary care level itself [93].

Mechanisms of the gene mutations or abnormal inheritance and its involvement with the environmental surroundings and the individuals will lead to effective identification of at risk individuals and make them target population for the implementation of the preventive measures [94].

MATERIALS AND METHODS

MATERIALS AND METHODOLOGY

Describing clearly about the materials and methodology will let the researcher have a clear idea about the nature, process, intent and method of the research he or she is taken in hand. This description also serves as a potential source of information for the future researchers, students and others who are referring this to get a clear picture to repeat the study in some other setting or to improvise the study further.

Categorizing and organizing the materials and methods will also be a significant help to complete a study with the available resources as well as to complete the study in the targeted period of time.

As far as this study is concerned, it is a descriptive cross sectional study in which 208 female under graduate medical students were approached in their classrooms after their theory classes are over.

The study period was from February 2016 to July 2016.

Descriptive studies involve the studies that do not involve any experimental procedures. It mainly involves the categorization of the variables taken into consideration.

A cross sectional study is a one type of observational study. The readings and samples are taken at one point of time. The cross sectional studies are otherwise called as transversal study, prevalence study or cross sectional analysis.

The students were selected by random sampling methods. In random sampling method, each member of the study group will get an equal chance to get selected for the study. A simple random sampling is done here that every student is chosen by chance without any bias. The aim and objectives of the study is explained and the importance of such studies was also stressed to them so that they actively participate.

The importance of the truth and validity of their responses to the scales given to them were also stressed and they were assured that their identity will be confidential. They were also informed that the study will be performed only after their consent and not otherwise. The therapeutic guidance for the participants who scored significant scores was assured.

First, informed consent was obtained and the students were taken signature from the information sheet which assured the confidentiality of the results.

The semi structured sociodemographic proforma was given to them to fill in the details.

The scales Eating Attitude Test – 26 (EAT 26), Generalized Anxiety Disorder scale – 7 (GAD 7) and Hamilton Anxiety Rating Scale (HAM-A) were applied on them. They are self administered screening and rating scales.

The selected female undergraduate students were first explained the items featured in the scales and what they represent. They were all administered the three scales simultaneously and Abnormal Eating attitude is assessed from their

scores in EAT 26. The numbers of persons who had abnormal attitudes with eating and scored positively in GAD-7 were estimated. The severity of anxiety in these persons was also further assessed using HAM- A.

Then the results were tabulated in relation to their socio demographic status and the relative prevalence.

The prevalence of Generalized Anxiety Disorder in female medical students having abnormal eating attitudes was assessed from all the above processes

Eating Attitude Test- 26:

David Garner created EAT – 26. The symptoms which are classically characteristic of eating disorders are self-assessed by using series of questions with their response scored after completion. This is not a pure diagnostic test but this test to identify the individuals who are at risk to develop eating disorders or may be currently suffering without their awareness. This mainly offers, earlier identification of the illness, if present, by prompt referral for professional help and early treatment which significantly reduces the morbidity and mortality due to this illness. It is like a referral index in which the potential individuals going in for an eating disorder can be segregated. It is very sensitive in detecting anorexia nervosa in particular [95].

EAT – 26 can be used in multiple settings like colleges, schools, medical institutions, etc., It can be deciphered by medical professionals, teachers, professors and can be self-administered as it is in simple English.

There are three criteria's in the answering of this scale, total score based on the answers given to the questions, behavioural symptoms answers and the Body Mass Index calculation. The person who underwent the test is referred when she meets the threshold score for one or more criteria.

Body Mass Index according to the age of the individual is considered whether the person is underweight for her age and height. Body Mass Index is calculated by dividing the individual's weight in kilograms with the square of height in meters.

In the items 1-25, for the responses, always -3 points, usually -2 points and often -1 point. The rest (sometimes, rarely and never) are 0 points. For question 26, always, usually and often responses yield 0 points. Sometimes – 1 point, rarely – 2 points and never – 3 points. Scores more than 20 is considered as significant [96].

According to the behavioural symptoms, positive screen for any of the five questions is considered significant.

Of the five questions of the behavioural symptoms, scores two to three times a month, once a week, two to 6 times a week and once a day or more were significant in the first question. In the next two questions scores once a month or less, two to three times a month, once a week, two to 6 times a week and

once a day or more were significant. In the fourth question once a day or more was considered as significant. In the last if the student has lost 20 pounds or more in the last 6 months was considered significant.

In the Eating attitudes Test 26, of the 26 statements in the Part B can be sub classified as:

1. Dieting - 1, 6, 7, 10, 11, 12, 14, 16, 17, 22, 23, 24, 26
2. Bulimia and food occupation scale items – 3, 4, 9, 18, 21, 25
3. Oral control subscale items – 2, 5, 8, 13, 15, 19, 20

EAT – 26 is a screening study to find out whether there is an eating attitude present in an individual or not[97]. Presence of an abnormal eating attitude signifies the probable presence of underlying eating disorder and the particular individual should receive professional help in order to confirm the diagnosis and classify the disorder. Finally the treatment should be started as early as possible.

Generalized Anxiety Disorder – 7 Scale:

This scale is used for screening persons with Generalized anxiety [98]. It is a self-administered questionnaire. Responses are given on the basis of the perspective of the last two weeks. Feeling nervous, anxious or at edge, not able to stop worrying, worrying too much about different things at once, having trouble in relaxing, being very restless, becoming easily irritable and feeling something awful is about to happen are the statements for which the scoring had to be done.

Scores are distributed as follows – Not at all -0 points, several days – 1 point, more than half of the days – 2 points and nearly every day – 3 points. Scores more than 10 is significant with need of referral for professional help.

Hamilton Anxiety Rating Scale:

Max Hamilton developed this scale at 1959 to rate the severity of anxiety in individuals who have already been diagnosed to suffer from Anxiety Disorders. It is a clinician administered scale. It has a total of 14 items, each of which contains a list of symptoms

The 14 items are anxious mood, tension, fears, insomnia, intellectual, depressed mood, somatic (muscular), somatic (sensory), cardio vascular symptoms, respiratory symptoms, gastrointestinal symptoms, genitor urinary symptoms, autonomic and behaviour during the interview. Each of the 14 items is rated from 0 to 4. The most severe is being rated as 4. The total of the scores are added and indicates the severity of anxiety [99]. Total can be from 0 to 56. Less than 17 is mild anxiety, 18 – 24 indicates mild to moderate; 25 – 30 indicates moderate to severe and more than 30 severe anxieties.

Univariate Analysis was performed and the Chi-square test was used to find the correlation between Anxiety and their associated socio-demographic variables. Data was expressed in terms of proportion or percentage. Level of significance was set at $\rho<0.05$.

RESULTS

RESULTS

The total students participated in the study was 208. All of them were explained about the type and the purpose of the study. Then they were also explained about the scales used their components and what is the inference of each scale. Then they were also stressed upon the importance of such studies and the purpose of them. Informed consent was obtained from each of them who are willing to participate

The distribution of the undergraduate medical students with regards to their academic year was as follows.

Table 1 – No. of students and the year of study.

Academic year	Number of students	Percentage %
1st year	58	28
2nd year	64	31
3rd year	49	23
4th year	37	18

Table 2 – socio demographic distribution		
Parameter	Number of students	Percentage %
Physical illness	43	20.67
Staying away from home	108	86.53
Family problems	42	20.19

In the total number of students (208) students who reported physical illness is 20.67%. Students who are staying away from home are 86. 53%. Students who are having significant family problems are 20.19%.

Table 3– Age distributions		
Age	Number of students	Percentage %
18 to 20 years	142	68
more than or = 21 years	66	32

Number of students between the age group 18 to 20 years are 68% and the students more than or equal to 21 years of age is 32%.

Table 4–BMI distributions		
BMI	Number of students	Percentage %
under weight	27	13
Normal	156	75
Pre obese	22	10.6
obesity class I	3	1.4
obesity class II	0	0
obesity class III	0	0

Of the total 208 students 75% belonged to the normal weight distribution. The percentage of underweight category is 13%. The students belonging to preobese category is 10.6%. Obesity class I category had 1.4% of the students.

Table 5 -Descriptive Statistics					
Parameters	**N**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Height	208	130	175	159.25	6.582
Weight	208	35	87	54.90	8.239
Highest weight	208	38	93	58.80	8.158
Lowest weight	208	34	70	51.57	7.249
Ideal weight	208	40	75	55.42	6.136
Age	208	18	25	19.69	1.448
BMI	208	14	34	21.69	3.075
EAT- 26	208	0	36	6.54	5.886
GAD – 7	208	0	19	6.23	4.087

N = 208

Of the 208 students approached, the range of various parameters and scales administered are tabulated with regard to their highest and the lowest values.

Of the total of 208 students, regarding the height distribution, the tallest student was about 175 cm and the shortest was about 130 cm. the mean value was about 159.25 cm (nearly 5 feet 3 inches).

In the study sample of 208 students the lowest current weight recorded was 35 kg and the highest current weight recorded was 87 kg.

In the total sample of the 208 female undergraduate medical students, the lowest Body Mass Index calculated was 13 kg/m^2 and the highest Body Mass Index was 34 kg/m^2. The mean Body Mass Index was 21.69 kg/m^2 which came in the normal class of the body mass index classification of obesity.

The lowest score in Eating Attitudes Test – 26 was 0 and the highest score attained in the same was 36. The mean value of the scoring was found to be 6.54.

The highest score in Generalized Anxiety Disorder Scale 7 was 19 and the lowest score was found to be 0. The mean value was 6.23. This average score of 6.23 indicates the general prevalence of GAD in female undergraduate students without demarcating them with any other factors.

Table 6– EAT – 26 Dieting subscale scoring distribution					
Dieting subscale	**Frequency of 42 high risk individuals (yes/no)**	**Percentage positive within 42 high risk individuals**	**Frequency of rest of 166 individuals (yes/no)**	**Percentage positive within rest of 166 individuals**	**Total positive percentage**
Question 1	16/26	38.09%	31/135	18.67%	22.59%
Question 6	17/25	40.47%	23/145	13.85%	19.23%
Question 7	9/33	21.42%	15/151	9.03%	11.53%
Question 10	12/30	28.57%	7/159	4.21%	9.13%
Question 11	13/29	30.95%	17/139	10.24%	14.42%
Question 12	17/25	40.47%	24/142	14.45%	19.71%
Question 14	8/34	19.04%	20/146	12.04%	13.46%
Question 16	10/32	23.80%	18/148	10.84%	13.46%
question 17	8/34	19.04%	10/156	6.02%	8.65%
Question 22	4/38	9.52%	12/144	7.22%	7.69%
Question 23	4/38	9.52%	13/153	7.83%	8.17%
Question 24	5/37	11.90%	7/159	4.21%	5.76%
Question 26	25/7	59.52%	81/85	48.79%	50.96%

Of the dieting subscale questions, 26th question – Trying new and rich foods had the significant response in the high risk, not at risk as well as the total individuals

Table 7– EAT – 26 Bulimia and food preoccupation subscale question scoring distribution					
Bulimia and food preoccupation subscale	**frequency of 42 high risk individuals (yes/no)**	**Percentage positive within 42 high risk individuals**	**frequency of rest of 166 individuals (yes/no)**	**Percentage positive within rest of 166 individuals**	**total positive percentage**
Question 3	7/35	16.66 %	21/145	12.65%	13.46%
Question 4	8/34	19.04%	7/159	4.21%	7.21%
Question 9	4/38	9.52%	6/160	3.61%	4.80%
Question 18	10/32	23.8%	16/150	9.63%	12.5%
Question 21	8/34	19.04%	11/155	6.62%	9.13%
Question 25	7/35	16.66%	14/152	8.43%	10.09%

In the bulimia and food preoccupation subscales, Question 4 and 21 – preoccupied with fat in body and giving too much thought and time to food had maximum significant response in the high risk individuals.

Question 3 – finding one self preoccupied with food, got the maximum significant response in individuals having no risk as well as the total students studied

Table 8 – EAT – 26 Oral control subscale question scoring distribution					
Oral Control subscale	**frequency of 42 high risk individuals (yes/no)**	**Percentage positive within 42 high risk individuals**	**frequency of rest of 166 individuals (yes/no)**	**Percentage positive within rest of 166 individuals**	**total positive percentage**
Question 2	10/32	23.8%	12/154	7.22%	10.57%
Question 5	15/27	35.71%	44/122	26.50%	28.36%
Question 8	11/31	26.19%	28/138	16.86%	18.75%
Question 13	12/30	28.57%	7/159	4.21%	9.13%
Question 15	14/26	33.33%	24/142	14.45%	18.26%
Question 19	13/29	30.95%	23/143	13.85%	17.30%
Question 20	10/32	23.8%	21/145	12.65%	14.90%

In the oral control subscale, Question 5 - cut one's food into small pieces had the maximum significant response in high risk, no risk and total students.

Of the overall questions – Question no 26 had significant responses in all the categories. This signifies that most of the students are hesitant to try new and rich foods and that is not good for their weight management.

Table 9 –EAT 26 subscales and their average contribution to the high scores		
Dieting sub scale items	Bulimia and Food Preoccupation subscale items	Oral Control subscale items
55%	10%	35%

N=8

From the total sample of 208 students, 42 students scored in EAT 26 scale. Of them 8 of them scored high in the Part B section of the 26 statements and the scorings.

The percentage of the subscale items that provided for the high score (> or = 20) was analyzed and the dieting subscale items contributed averagely 55% of the total scoring. Next comes the oral control subscale items with 35% average and the last came the bulimia and food preoccupation subscale items with 10% average

Table 10– Ideal weight perception in the study sample			
Parameter		Number of students whose perceived ideal weight > or = 10 kgs	Percentage
Students who are under weight < 10 kg of their ideal weight	Yes	20	9.6%
	No	5	2.4%
Total		25	12%

From the total sample of 208 students nearly 25 students (25%) perceived their ideal weight to be equal to or less than the actual ideal healthy weight they ought to be.

In them, 5 students (2.4% of total) were actually 10 or more kilograms less than their ideal weight. This indicates the prevalence of the body dismorphism and the present culturosocial influences on the students and their healthy body image perception.

Table 11– cross tabulation of Age vs EAT 26						
			EAT 26		Total	P value
			Normal	Score >20 or / and Behavioural questions significant		
Age	18 to 20 years	Count	113	29	142	0.903 Not significant
		% within	79.6%	20.4%	100.0%	
	>/= 21 years	Count	53	13	66	
		% within	80.3%	19.7%	100.0%	
Total		Count	166	42	208	
		% within	79.8%	20.2%	100.0%	

Of the students studied the number of students within the age group of 18 to 20 years is 142 students. Out of them, 29 students had abnormal eating attitudes.

In the age group of above 20 years, nearly 66 students participated and of them nearly 13 students had abnormal eating attitudes.

The p value for the correlation between age and EAT 26 values were not found to be significant.

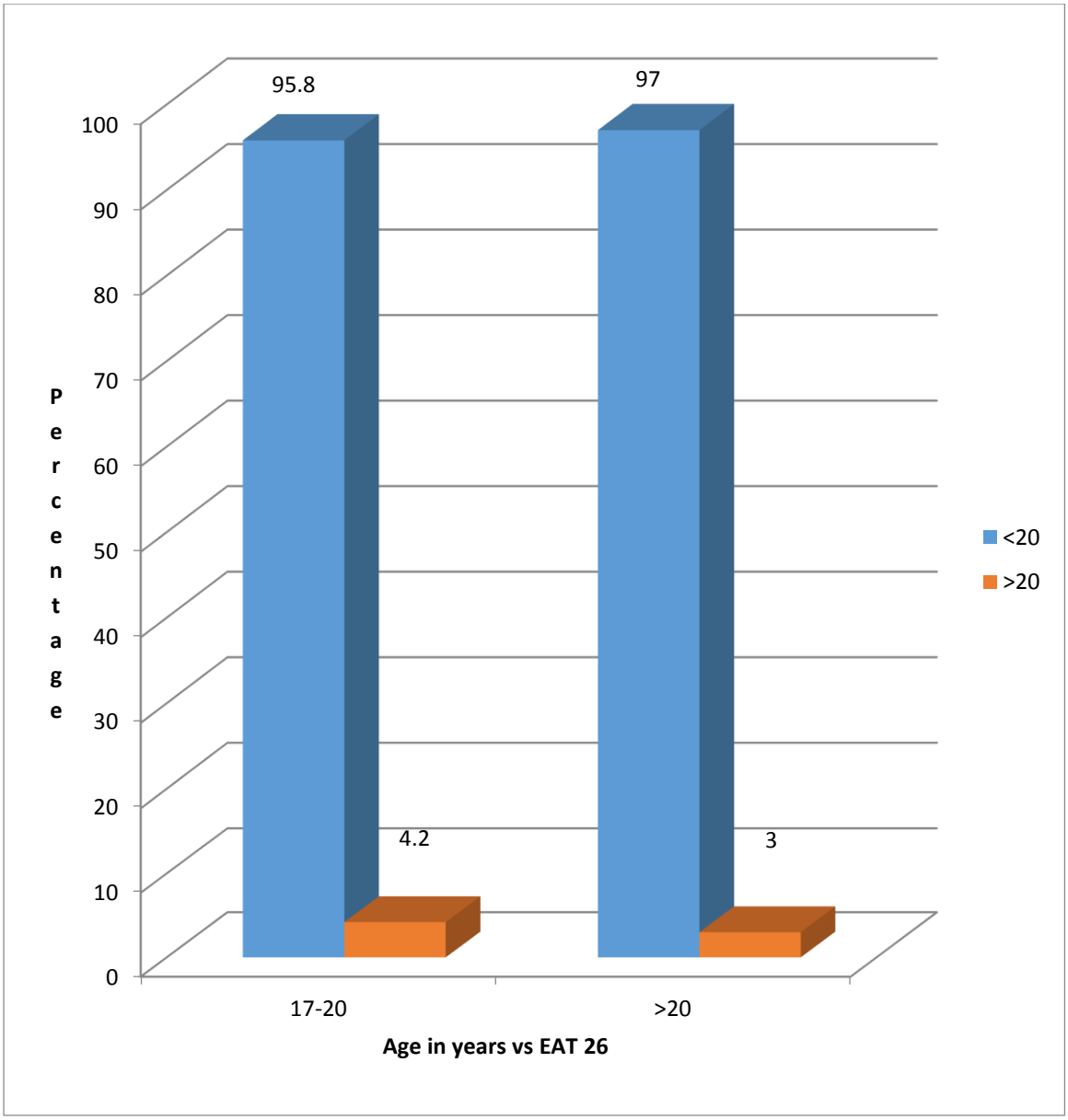
95.8
97
4.2
3
100
90
80
70
60
50
40
30
20
10
0
Percentage
17-20
>20
<20
>20
Age in years vs EAT 26

Table 12- cross tabulation of Family problem vs EAT 26						
			EAT 26		Total	P value
			Normal	Score >20 or / and Behavioural questions significant		
Family problems	No	Count	130	36	166	0.286 Not significant
		% within	78.3%	21.7%	100.0%	
	Yes	Count	36	6	42	
		% within	85.7%	14.3%	100.0%	
Total		Count	166	42	208	
		% within	79.8%	20.2%	100.0%	

In relation to the presence of family problems as a stressor, nearly 42 students answered that there was some significant family problem present. In them, nearly 6 of them showed abnormality in their eating attitudes. P value was found to be 0.286, which showed no significance.

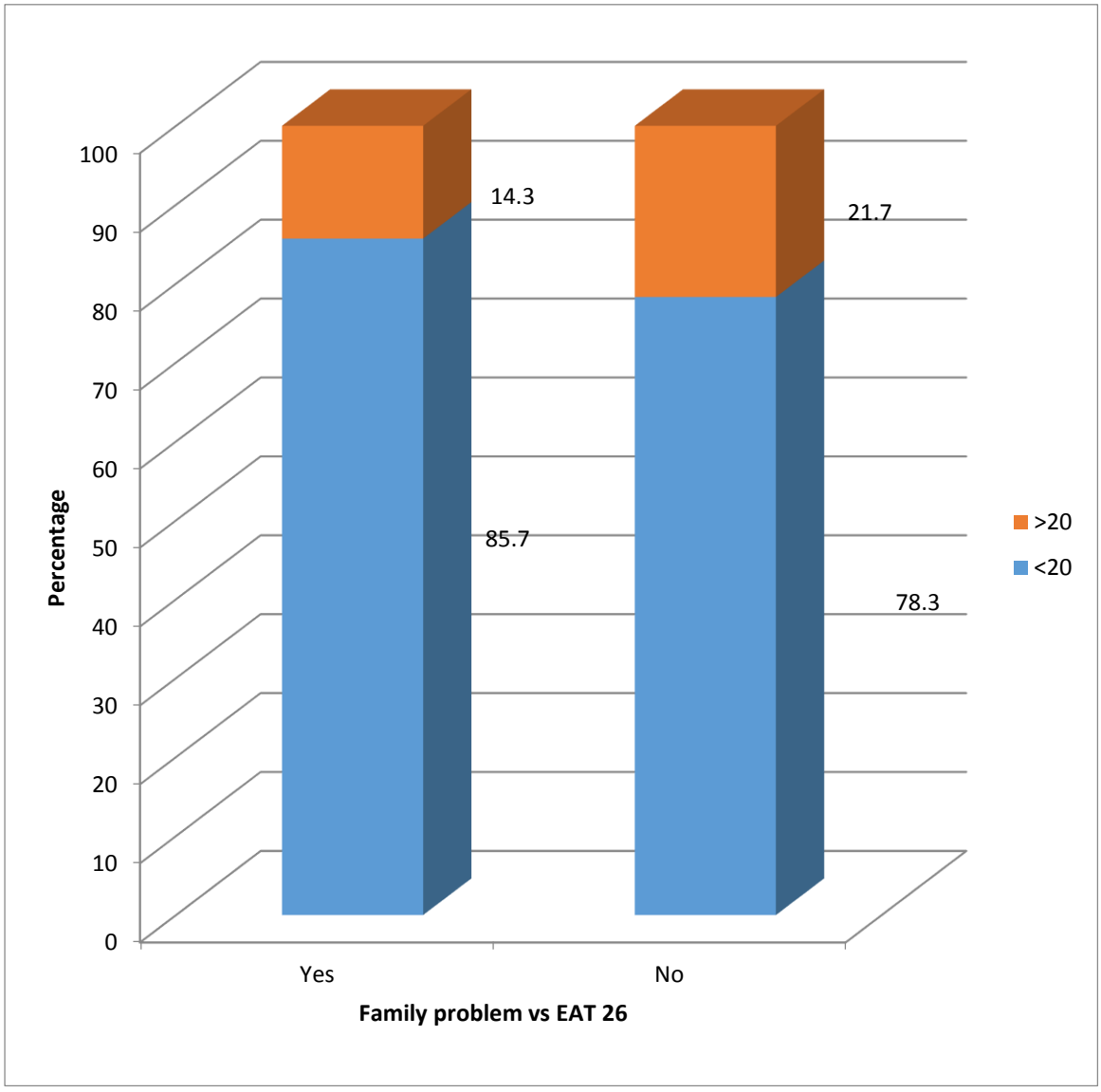
100
90
80
70
60
50
40
30
20
10
0
Percentage
14.3
85.7
21.7
78.3
Yes
No
Family problem vs EAT 26
>20
<20

Table 13 – cross tabulation of Physical illness vs EAT 26						
			EAT 26		Total	P value
			Normal	Score >20 or / and Behavioural questions significant		
Physical Illness	no	Count	131	34	165	0.771 Not significant
		% within	79.4%	20.6%	100.0%	
	yes	Count	35	8	43	
		% within	81.4%	18.6%	100.0%	
Total		Count	166	42	208	
		% within	79.8%	20.2%	100.0%	

The total numbers of students having physical illness, which they consider significant, are 43 students. Out of them 8 students showed abnormality in eating attitudes.

P value was found to be 0.771, which revealed insignificance.

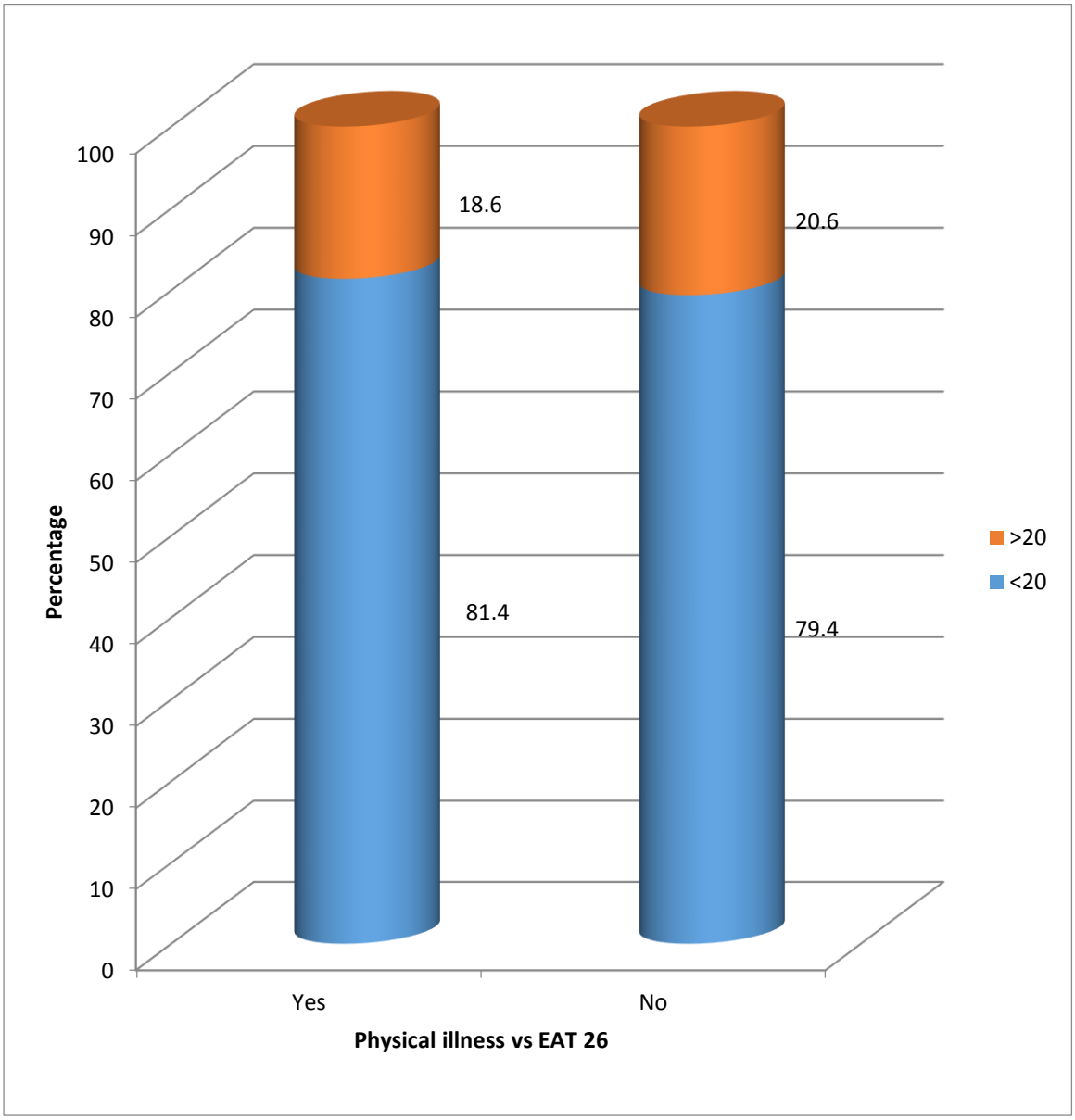
100
90
80
70
60
50
40
30
20
10
0
Percentage
18.6
20.6
81.4
79.4
>20
<20
Yes
No
Physical illness vs EAT 26

Table 14- Cross Tabulation of Staying away from home vs EAT - 26						
			EAT 26		Total	P value
			normal	Score >20 or / and Behavioural questions significant		
Staying away from home	No	Count	24	4	28	0.403 Not significant
		% within	85.7%	14.3%	100.0%	
	Yes	Count	142	38	180	
		% within	78.9%	21.1%	100.0%	
Total		Count	166	42	208	
		% within	79.8%	20.2%	100.0%	

In the total sample, nearly 180 students stayed away from home. Of them 38 students showed abnormality in eating attitudes. The p value was found to be 0.403, which showed no significance.

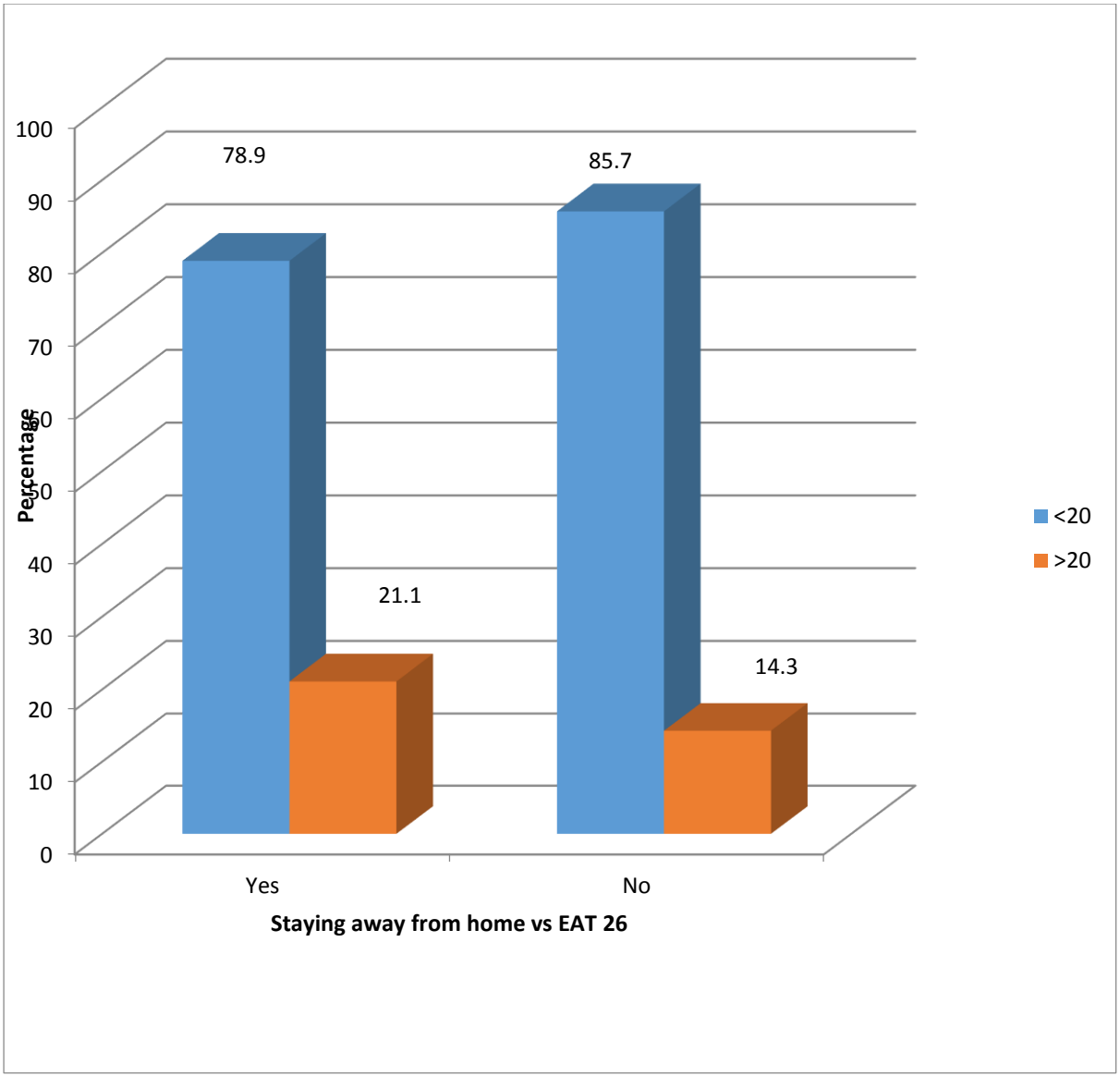
100
90
80
70
60
50
40
30
20
10
0
Percentage
78.9
21.1
85.7
14.3
Yes
No
Staying away from home vs EAT 26
<20
>20

Table 15- Cross Tabulation of Body Mass Index vs EAT 26						
			EAT 26		Total	P value
			Normal	Score >20 or / and Behavioural questions significant		
BMI classification	Under Weight	Count	23	4	27	0.682 Not Significant
		% within	85.2%	14.8%	100.0%	
	Normal	Count	125	31	156	
		% within	80.1%	19.9%	100.0%	
	Pre obese	Count	16	6	22	
		% within	72.7%	27.3%	100.0%	
	Obesity class I	Count	2	1	3	
		% within	66.7%	33.3%	100.0%	
Total		Count	166	42	208	
		% within	79.8%	20.2%	100.0%	

The body mass index was calculated for each individual from the current weight in kg, which was divided by the square of their height in meters. From this the students were classified as underweight (BMI < 18.5), normal weight (BMI 18.5 to 24.9), over weight (BMI 25.0 to 29.9), class I obesity (BMI 30.0 to 34.9), class II obesity (BMI 35.0 to 39.9) and class III obesity (BMI >40.0).

Of the underweight individuals, 4 of them showed abnormal eating attitudes. In the pre obese category nearly 6 of them showed abnormal eating attitudes and in obese class I only 1 of them showed abnormality in eating attitudes. Ironically the highest number of Eating attitudes abnormality were found in normally weighing individuals (31 in number).

P value was found to be 0.682, which was not significant.

Table 16 – Cross Tabulation of Physical illness vs GAD 7						
			GAD &		Total	P value
			Normal	Score >10		
Physical illness	no	Count	140	25	165	0.206 Not significant
		% within	84.8%	15.2%	100.0%	
	yes	Count	33	10	43	
		% within	76.7%	23.3%	100.0%	
Total		Count	173	35	208	
		% within	83.2%	16.8%	100.0%	

The sample of students showing high scores in Generalized Anxiety scale, who also mentioned that they have a physical illness were counted to 10 in number (4.8 %).

The P value was found to be 0.206 which was not significant in correlation.

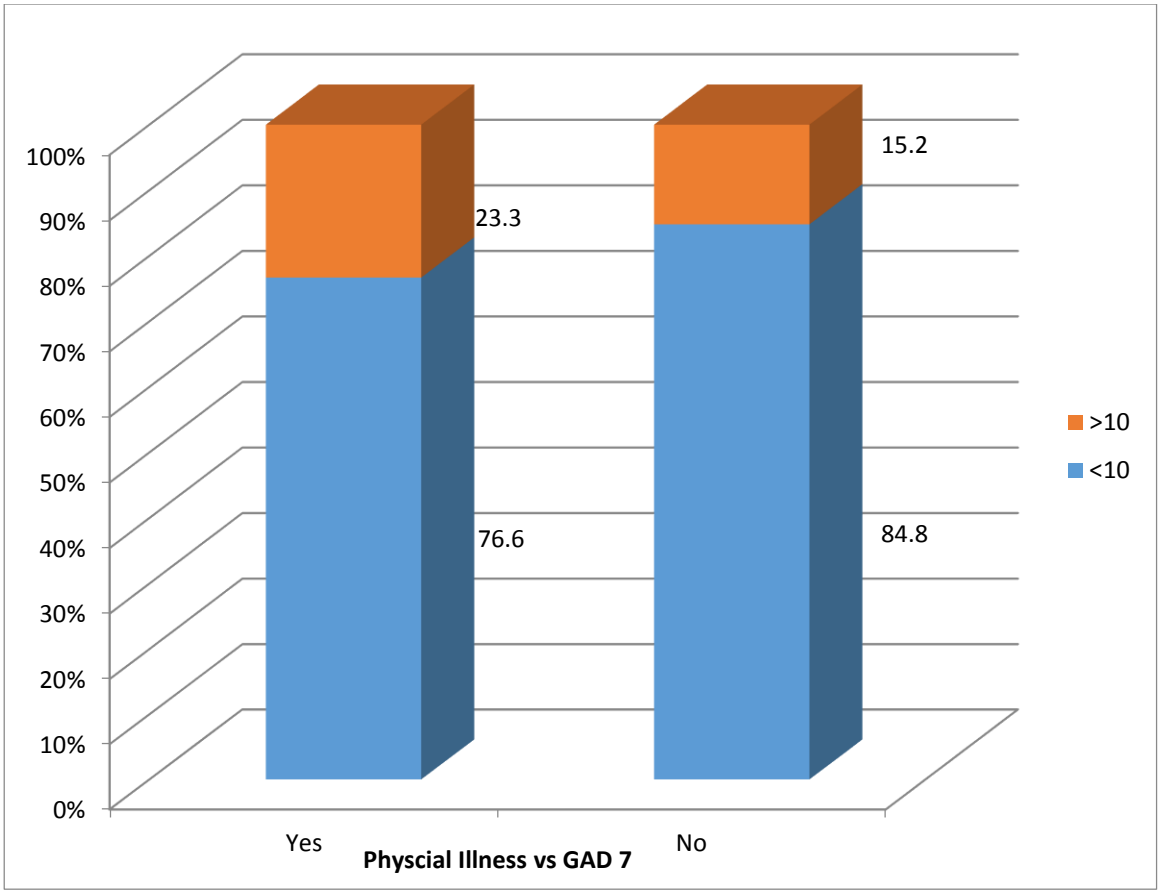
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
23.3
76.6
15.2
84.8
Yes
No
>10
<10
Physcial Illness vs GAD 7

Table 17 – Cross Tabulation of Staying away vs GAD 7						
			GAD 7		Total	P value
			Normal	Score >10		
Staying away	No	Count	20	8	28	0.074 Not significant
		% within	71.4%	28.6%	100.0%	
	Yes	Count	153	27	180	
		% within	85.0%	15.0%	100.0%	
Total		Count	173	35	208	
		% within	83.2%	16.8%	100.0%	

A total of 180 students were staying away from home for their studies. Out of them, nearly 27 (12.98%) of them scored 10 and above in the GAD 7 scale.

The p value was 0.074 which scored very close to the correlation coefficient (p = 0.05), but anyway was not significant.

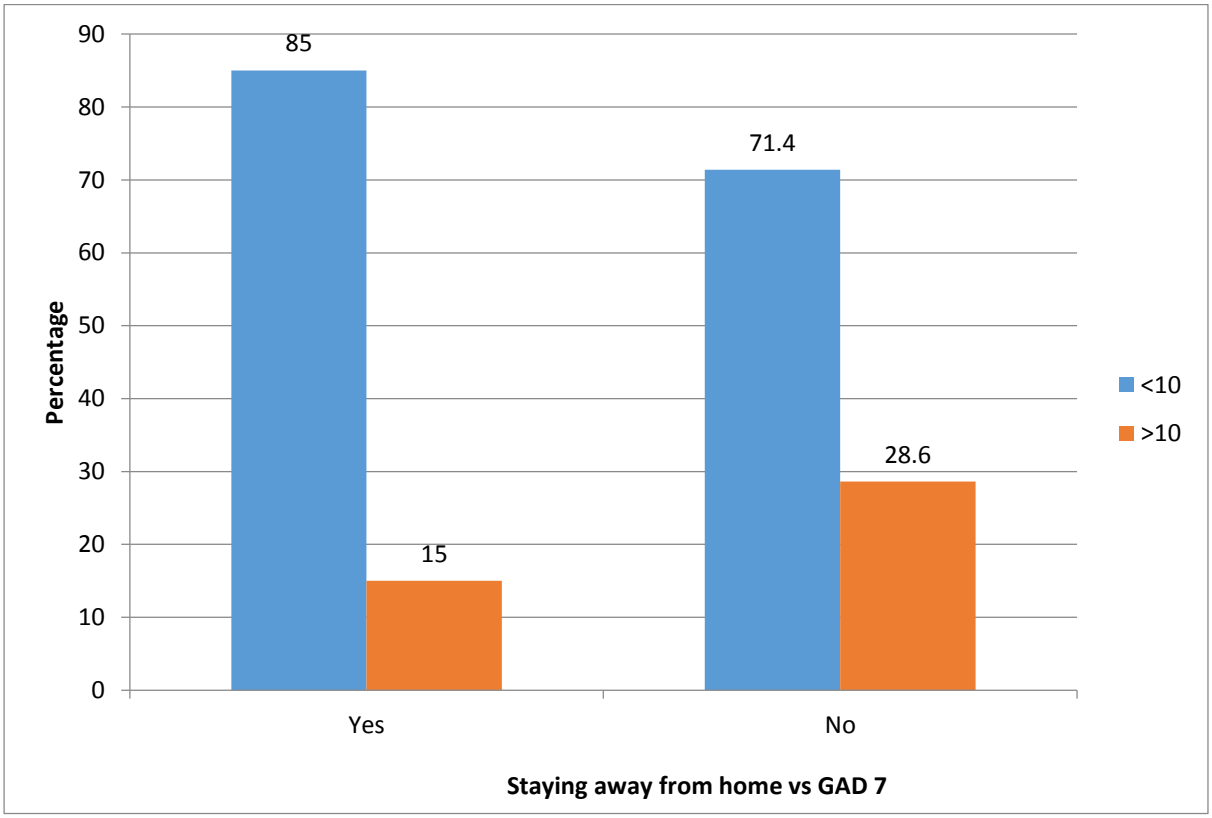
90
80
70
60
50
40
30
20
10
0
Percentage
85
15
71.4
28.6
Yes
No
<10
>10
Staying away from home vs GAD 7

Table 18 - Cross tabulation of Family problem vs GAD 7						
			GAD 7		Total	P value
			Normal	Score > 10		
Family Problem	No	Count	140	26	166	0.372 Not significant
		% within	84.3%	15.7%	100.0%	
	yes	Count	33	9	42	
		% within	78.6%	21.4%	100.0%	
Total		Count	173	35	208	
		% within	83.2%	16.8%	100.0%	

Number of students with family problems who scored significantly in the GAD 7 scale were 9 students (4.32%).

The p value was found to be 0.372 which did not have significant correlation between the variables.

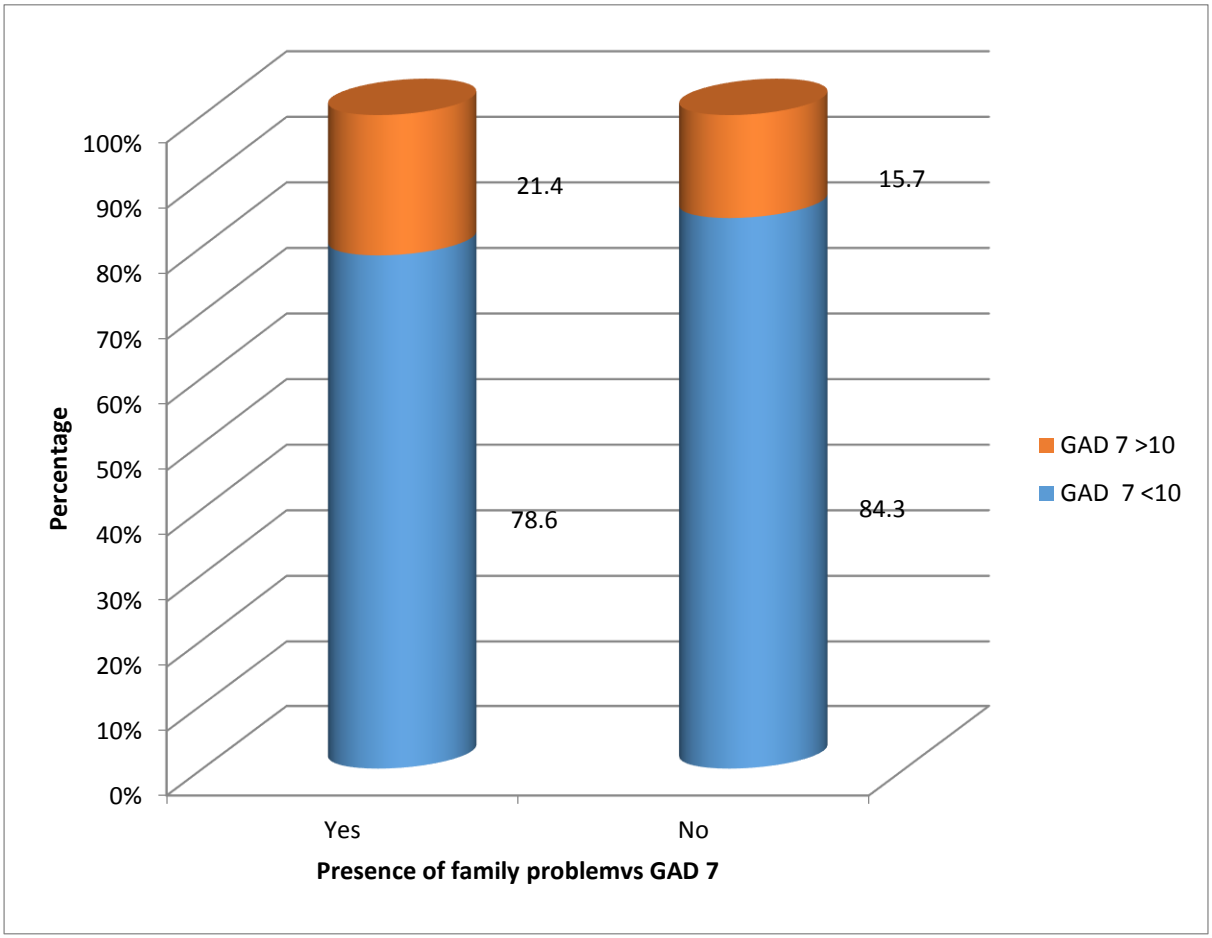
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Percentage
21.4
78.6
15.7
84.3
Yes
No
Presence of family problemvs GAD 7
GAD 7 >10
GAD 7 <10

Table 19 - Cross Tabulation of Body Mass Index vs GAD 7						
			GAD 7		Total	P value
			Normal	Score > 10		
BMI classification	Under weight	Count	22	5	27	0.701 Not significant
		% within	81.5%	18.5%	100.0%	
	Normal weight	Count	132	24	156	
		% within	84.6%	15.4%	100.0%	
	Pre obese	Count	17	5	22	
		% within	77.3%	22.7%	100.0%	
	Obesity class I	Count	2	1	3	
		% within	66.7%	33.3%	100.0%	
Total		Count	173	35	208	
		% within	83.2%	16.8%	100.0%	

Total number of students in the under weight class who scored significantly in the GAD 7 scale were 5 students (2.4%). In the normal BMI class the number of students who scored significantly was 24 (11.5%). In the pre obese class the number of students who had significant GAD scores was 5 (2.4% of total). In the obese class I the number of student was 1 (0.48 %). The p value was 0.701 which was not found to be significant.

Table 20 - Cross Tabulation of GAD 7 vs EAT 26				
Scale	**Category**	**Number of students**	**GAD – 7**	
			Score < or = 9	**Score >or = 10**
EAT 26	Score >20 or / and Behavioural questions significant	42	29	13
	Score < 20 and Behavioural Questions not significant	166	137	29

In the total of 208 students studied, 166 students did not show abnormality in the eating attitudes. The remaining 42 individuals had abnormality in EAT – 26 scale. In those 42 students 13 of them scored significant scores in GAD -7 scale.

So the prevalence of generalized anxiety in students with apparent Eating disorder is about 6.25%.

Table 21 - Severity of GAD by using HAM A in students with Eating Attitudes Problem			
Severity of Anxiety	No of students GAD 7 positive	% within 13 students	% total in 208 students
Mild	10	92%	4.8 %
Moderate	1	3%	0.005%
Severe	2	5%	0.01%

In the 13 students showing significant scores in both EAT 26 and GAD 7 were assessed for the severity of anxiety by using HAM –A rating scale.

This revealed 10 of them had mild level of anxiety. 1 of them had moderate level of anxiety and 2 of them had severe level of anxiety.

DISCUSSION

DISCUSSION

This study was conducted among the undergraduate female medical students studying in Thanjavur Medical college. The study period was from January 2016 to June 2016. The students were approached after getting their informed consent. Nearly 208 students were studied. The selection was based on random sampling method. A semi structured proforma was used to assess the socio demographic data of the students.

The following scales were applied to the students.

EATING ATTITUDES TEST – 26

GENERALIZED ANXIETY DISORDER SCALE – 7

HAMILTON ANXIETY RATING SCALE

When the students were assessed for correlation in family problems and abnormalities in Eating attitudes abnormality, the percentage of students having family problems were 20.19%. Students having both are 2.8%. There was no significance in correlation in these two factors. This is in contrast to the studies showing significant association between family stressors and eating disorders. In various cross sectional studies to assess the various risk factors in eating disorders, there showed link between family functioning and pressures from parents and abnormal eating behaviours[100]. Deficits in parental control, discard by the parents and drastic changes in the family structure results in eating

abnormalities in the young population[101]. Eating disorders in mother also resulted in the eating disorders in childhood itself [102]. The individuals satisfaction towards the family functioning and maternal education also influences the eating attitudes[103].

About 43 (20.67%) students were suffering from some physical illness from the total sample. Out of them 8 (3.8%) of them had abnormal Eating attitudes. There was no significance in correlation between these two factors. Studies revealed abnormalities due to physical illness but not exact physical illness as a predisposing factor in eating abnormalities. But eating disorder causes abnormal proprioception, abnormal levels in CRH, beta endorphins, NPY and leptin in the CSF and atrophy in cerebrum as well as dilation of ventricles.

In the sample of 208 students about 180 (86.5%) students are away from home. Of them 38 (18.26%) students have abnormal eating attitudes. There was no significant correlation between these two factors. It is in contrast to studies showing there were significant increased values in EAT 26 in students staying away from home[104, 105]. Exposure of the students to newly found independence, new varieties of food, exposure of new dieting measures and fitness faddism resulted in abnormal eating as well as dieting patterns. This may lead to eating disorders in students living away from home.

In the sample of 208 students, in BMI calculation, 12.98 belonged were underweight, 75% were normal weight, 10.5% were pre obese and 1.44 % obesity category. Of them 1.9%, 14.9%, 2.8% and 0.48% respectively showed abnormal eating attitudes. There was no significant correlation between these two factors. Nearly all of the studies available did not show any correlation between the eating attitudes and Body mass index[106].

From the total sample 43 students showed significant physical illness. In these students 10 of them showed higher scores in GAD – 7. There was no significant correlation between these two factors. Anxiety disorders are associated with various physical illnesses. The physical illnesses may result in anxiety disorders as well as may be the result of these disorders. Generalized anxiety disorder is mainly associated with irritable bowel syndrome[107]. Pheochromocytoma[108] and hyperthyroidism[109] mimics generalized anxiety disorders.

Illnesses may be a consequence of a long standing eating disorder too. Skin becomes dry and lifeless. Hair fall and denatured hair which is very brittle is seen in these patients. There may be excessive hair distribution in the body. There are features of cardiac disorders like low blood pressure, slow pulse, features of failure and even arrhythmias may be seen due to electrolyte imbalance. There are Gastro intestinal symptoms like constipation. Slowness of movements, slow and sluggish mental activities may result due to this illness.

These symptoms may increase in severity and may even lead to multi organ failure. Patient may go in for severe emaciation and may succumb to the illness and ultimately to death.

In the total sample of 208 students 180 students stayed away from home. In these students 12.9 % of the students had significant scoring in Generalized anxiety disorder 7 scale. There was no significant correlation between these two factors. The concept of separation anxiety comes into role here. There was association between separation of individuals from their homes where they lived for a long time to a new environment with various changes and development of various types of anxiety disorders including generalized anxiety disorder [110]. Separation anxiety from near and dears like parents, siblings and friends resulted in increased anxiety prevalence.

In the total sample of 208 students 42 (20.9%) students significant family problems. In them about 9 (4.32%) students had high scores in Generalized anxiety disorder 7 scale. There was no significant correlation between these factors. In a 10 year prospective study of a community sample of 3021 individuals, generalized anxiety disorder was more closely associated with other anxiety disorders rather than depressive disorders. Increased generalised anxiety disorder was seen in individuals having parents having anxiety disorders[111].

In a study conducted in 164 young women. In this study a sudden or severe life changing events had anxiety or depression or both. There was increased prevalence of anxiety in individuals having separated parents[112].

In a study of 1018 twins collected from population registry. Psychopathology in these twins following parental loss vs parental separation was studied. Generalized anxiety disorder was associated with separation from parents and following death of parents before the age of 17 years[113].

In the sample of 208 students, in BMI calculation, 12.98 belonged were underweight, 75% were normal weight, 10.5% were pre obese and 1.44 % obesity category. Of them, 2.4%, 11.53%. 2.4 % and 0.48% respectively showed increased score in the Generalized Anxiety Scale 7. There was no significant correlation between Body mass index and high generalized anxiety disorder 7 scoring. Lifetime occurrence of generalized anxiety disorder is increased in persons having high Body Mass Index[114]. Low body mass index is seen in individuals having eating disorders and generalized anxiety disorder[115].

Students were mainly assessed to find significant Generalized Anxiety scale values as well as significant Eating Attitudes test 26 values. In the total sample of 208 student, 13 students scored significantly in both scales. The inference is they probably have Generalized anxiety disorders superimposed with abnormal Eating attitudes (probably an underlying Eating disorder).

The total prevalence percentage of Generalized anxiety in Eating attitudes abnormality was 6.25%, which is lower than of 14% in anorexia nervosa, 11% in bulimia nervosa and nearly 50% in binge eating disorders.

The overall prevalence of generalized anxiety percentage is 6.25% which within the global prevalence range of 6 to 8%.

Of the students scoring high for generalized anxiety disorder 7 scale, the severity of their anxiety levels were assessed by symptomatology, by using Hamilton Anxiety Rating Scale.

In the students having significant Eating attitudes score and high generalized anxiety disorder 7 score – mild anxiety was seen in suffering from mild anxiety were 10 students, moderate anxiety were student and severe anxiety was 2 students. That leads to a total percentage of 4.8%, 0.005% and 0.01% respectively. Within the 13 students it was 92%, 3% and 5% respectively.

CONCLUSION

CONCLUSION

The following results can be brought out by this descriptive cross sectional study to assess the prevalence of generalized anxiety in female undergraduate students having abnormal eating attitudes and probable eating disorder.

1. About 208 students were approached and the study was carried out by applying EAT - 26, GAD - 7 and HAM -A scales.
2. A semistructured proforma was given to them to assess their year of study, presence or absence of physical illness, presence or absence of family problems and presence or absence of them staying away from home.
3. The cross tabulation was done between these factors and both EAT 26 and GAD 7 scoring.
4. There were no significant correlation between all the above said factors and Eating Attitudes Test – 26 scale. This is not in par with many of the studies that showed significant correlation between the above said factors and abnormal eating attitudes.
5. The Body Mass Index classification among the students and their eating attitudes did not have significant correlation. But this is in par with majority of the studies that revealed the current body mass index does not influence the eating attitude of an individual.

6. As far as Generalized anxiety disorder 7 scale scoring and correlation with the factors of staying away, having physical illness and family problems, there were no significant correlation either like most of the studies done in the past to correlate these two variables.
7. The prevalence of Generalized Anxiety Disorder among female undergraduate medical college students having apparent Eating disorder was 6.25% which was not in par with the levels prevalence of Generalized anxiety disorder in eating disorder in the global level.
8. The total prevalence percentage of Generalized Anxiety disorder was 20.19% which is very much high than the general prevalence of Generalized Anxiety, which is 6 to 8%
9. In the severity assessment of anxiety in the individuals having generalized anxiety scales as well as Eating attitudes test 26 significance, were 4.8% , 0.005% and 0.01% of mild, moderate and severe anxiety respectively.

LIMITATIONS

LIMITATIONS

1. Students, even though were selected by random sampling method to limit selection bias, there is a chance that the student who was not giving the consent is more likely has the particular disorder and that may lead to low prevalence in the target group.
2. Limitations in Prevalence studies: The presence of false positives and false negatives are very common in prevalence studies as it is applied to a large population in a short span of time and is amenable to errors.
3. Limitations in Eating Attitudes Test – 26:
    a. There may be exaggeration and minimization of the scores in the scales.
    b. Administration of the scale in front of other individuals and peer students will also influence the results.
    c. The scale can be administered at only on particular point of time, so that won't necessarily predict a chronic disorder like eating disorder which sometimes may have a waxing and waning course.
    d. The individuals attitude about the social desirability and sometimes won't believe in the confidentiality of the process in spite of the reassurance given.
4. Generalized Anxiety scale – 7
    a. There may be exaggeration in the individual if the individual is affected by subjective anxiety by the environmental cues, any anxiety

provoking forth coming events like a class test and hormonal imbalance during menstrual cycle.

b. Minimization of the value or simply ticking off mechanically will also be present and that must be tried by the investigator to be reduced with all his efforts

c. Overlapping symptoms of other anxiety disorders which may be present in the student may give a false high value in this scale.

5. Both of these scales are not diagnostic scales but screening scales. The results are not to be considered concrete pertaining to that particular disorder. The students having high scores must be encouraged to take expert help.

6. Eating disorders are the group of disorders having the individuals affected by them not to get any professional help whatsoever their health is affected. They think that the life style choice and their ideologies on fitness, fatness and weight control is correct. Since the population is from the medical fraternity they also know what are the statement and questions that may lead to the diagnosis of eating disorder in them. So the avoid giving the correct responses.

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ANNEXURES

CONSENT FORM

I _____, hereby give consent to participate in the study conducted by **Dr. R. Janani**, post graduate in the Department of Psychiatry, Thanjavur Medical College and Hospital, Thanjavur – 613004 and to use my personal data and scores obtained in the questionnaires for the purpose of analysis and to study the prevalence of the disease.

Place :

Date : Signature of the Participant

INFORMATION SHEET

1. We are conducting a cross sectional descriptive study "**PREVALENCE OF GENERALIZEDANXIETY DISORDERAMONG FEMALE UNDERGRADUATE MEDICAL STUDENTS HAVING EATING DISORDER.**

2. At the time of announcing the results and suggestions, name and identity of the participants will be confidential

3. Taking part in this study is voluntary. You are free to decide whether to participate in this study or withdraw at any time, your decision will not result in any loss of benefits to which you are otherwise entitled.

4. The results of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment

Signature of the Investigator **Signature of the student**

Date :

Socio demographic proforma:

s. no	Variables	Parameters
1.	Academic year	1^{st} /2^{nd}/3^{rd} /4^{th}
2.	Family problems	Yes/No
3.	Physical illness	Yes/No
4.	Staying away from home	Yes/No

Eating Attitudes Test - 26

Instructions: this is a screening measure to help you determine whether you might have an eating disorder that needs professional attention. This screening measure is not designed to make a diagnosis of eating disorder or take a place of professional consultation. Please fill out the below form as accurately, honestly and completely as possible . there are no right or wrong answers . all your responses are confidential.						
Part A: Birth date :	Height in feet- Inches –					
Current weight:	Highest weight :					
Lowest weight:	Ideal Weight :					
Part B**: Check the response for each of the following statements**	**Always**	**usually**	**Often**	**Sometimes**	**Rarely**	**Never**
1. Am terrified about being over weight						
2. Avoid eating when I am hungry						
3. Find myself preoccupied with food						
4. Cut my food into small pieces						
5. Have gone on eating binges where I feel that I may not able to stop.						
6. Aware of the calorie content of the food I eat.						
7. Particularly avoid food with high carbohydrate content.						
8. Feel that others would prefer that I ate more.						
9. Vomit after I had eaten.						
10. Feeling extremely guilty after eaten.						
11. Am preoccupied with a desire to be thinner.						
12. Thinking about burning up calories when I exercise.						
13. Other people think that I am too thin.						
14. Am preoccupied with the						

thought of having fat in my body.						
15. Take longer than others to eat my meals						
16. Avoid foods with sugar in them.						
17. Eat diet foods						
18. Feel that food controls my life						
19. Display self control around food.						
20. Feel that others pressure me to eat.						
21. Give too much time and thought to food.						
22. Feel uncomfortable after eating sweets.						
23. Engage in dieting behaviour						
24. Like my stomach to be empty.						
25. Have an impulse to vomit after meals.						
26. Enjoy trying new rich foods						

Part C: Behavioural Questions In the past 6 months have you:	**Never**	**Once in a month or less**	**2-3 times a month**	**Once a week2-6 times a week**	**Once a day or more**
A. Gone on eating binges where you feel that you may not be able to stop? *					
B. Ever made yourself sick (vomited) to control your weight or shape ?					
C. Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?					
D. Exercised more than 60 minutes a day to lose or to control your weight?					
E. Lost 20 pounds or more in the last 6 months ?	Yes :			No :	

*Defined as eating much more than most people would under the same circumstances and feeling that eating is out of control.

Generalized Anxiety Disorder 7-item (GAD-7) scale

Over the last 2 weeks, how often have you been bothered by the following problems?

0 -Not at all sure
1- Several days
2- Over half the days
3- Nearly every day

1.	Feeling nervous, anxious, or on edge	0	1	2	3
2.	Not being able to stop or control worrying	0	1	2	3
3.	Worrying too much about different things	0	1	2	3
4.	Trouble relaxing	0	1	2	3
5.	Being so restless that it's hard to sit still	0	1	2	3
6.	Becoming easily annoyed or irritable	0	1	2	3
7.	Feeling afraid as if something awful might happen	0	1	2	3

Hamilton Anxiety Rating Scale (HAM-A)

0- Not present, 1- mild, 2- moderate, 3- severe, 4- very severe

1 Anxious mood 0 1 2 3 4

Worries, anticipation of the worst, fearful anticipation, irritability.

2 Tension 0 1 2 3 4

Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.

3 Fears 0 1 2 3 4

Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.

4 Insomnia 0 1 2 3 4

Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.

5 Intellectual 0 1 2 3 4

Difficulty in concentration, poor memory.

6 Depressed mood 0 1 2 3 4

Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.

7 Somatic (muscular) 0 1 2 3 4

Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.

8 Somatic (sensory) 0 1 2 3 4

Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.

9 Cardiovascular symptoms 0 1 2 3 4

Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.

10 Respiratory symptoms 0 1 2 3 4

Pressure or constriction in chest, choking feelings, sighing, dyspnea.

11 Gastrointestinal symptoms 0 1 2 3 4

Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.

12 Genitourinary symptoms 0 1 2 3 4

Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence.

13 Autonomic symptoms 0 1 2 3 4

Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.

14 Behavior at interview 0 1 2 3 4

Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing.

MASTER CHART

Sample Number	Socio Demographic Profile													EATING ATTITUDES TEST- 26																											
	Academic Year	Family Problems	Physical illness	Staying Away From home	Height (m)	current Weight (kg)	Highest Weight	Lowest Weight	Ideal Weight	ideal weight perception	Age	Body Mass Index	BMI class	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total
1	3	1	2	2	1.7	66	70	60	60	0	21	22.83	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	3	1	1	2	1.3	45	47	42	50	2	21	26.6	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	5
3	3	1	1	2	1.75	56	60	55	75	1	22	18.3	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4	3	1	1	2	1.66	52	52	46	56	0	21	18.9	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	3
5	3	1	1	2	1.60	55	55	50	53	0	21	21.48	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
6	3	1	2	2	1.6	52	52	46	55	1	20	20.31	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
7	3	1	1	2	1.65	70	73	62	65	1	21	25.73	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
8	3	1	2	2	1.55	51	57	51	55	1	20	21.25	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	6
9	3	1	1	2	1.55	49	53	49	50	1	20	20.41	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
10	3	1	1	2	1.65	55	60	50	60	1	22	20.22	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2
11	3	2	2	2	1.75	58	65	54	70	1	20	18.95	1	3	0	0	0	0	1	0	2	0	1	3	1	0	3	0	1	1	1	1	0	0	0	1	1	2	2	24
12	2	1	1	2	1.60	53	55	53	55	1	20	20.7	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
13	2	1	1	2	1.60	64	64	58	58	1	20	25	2	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	6
14	2	1	1	2	1.60	64	66	60	58	1	19	25	2	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	2	3	10
15	3	1	1	2	1.57	35	38	34	45	0	19	14.22	0	0	0	0	0	2	0	0	3	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	11
16	3	1	1	2	1.56	57	60	54	56	1	21	23.45	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
17	2	1	1	2	1.70	53	65	53	55	0	20	18.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	1	1	1	2	1.6	60	62	55	57	1	18	23.43	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	2	2	1	2	1.54	52	58	55	55	1	19	21.94	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
20	2	1	1	2	1.65	56	65	53	65	1	19	21.37	1	0	0	2	0	0	0	0	0	0	0	0	0	3	0	3	1	2	0	0	0	0	0	0	0	0	11
21	2	1	1	2	1.66	54	64	54	60	0	19	19.63	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
22	1	1	1	2	1.65	56	60	53	58	0	18	20.58	1	0	0	2	0	0	0	0	0	0	0	0	0	3	0	3	1	2	0	0	0	0	0	0	0	11
23	2	1	1	2	1.55	46	52	44	50	1	20	19.16	1	0	0	0	0	3	0	0	0	0	0	0	3	3	2	3	1	0	1	3	2	0	0	0	0	2	0	23
24	1	2	2	2	1.60	68	62	53	55	1	18	26.56	2	1	0	0	0	0	0	1	2	0	0	0	3	3	1	3	1	0	1	0	3	2	0	0	0	1	0	22
25	3	1	2	2	1.56	54.5	58	50	50	0	22	22.42	1	2	0	2	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7
26	3	2	1	2	1.57	54	59	50	54	1	21	21.95	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

27	3	1	1	2	1.59	46	56	40	56	1	20	18.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	3	1	1	2	1.52	44	48	40	50	1	20	19.04	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	4
29	3	1	1	2	1.48	44	50	44	45	1	20	20.09	1	2	0	0	0	1	1	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	11
30	3	1	1	1	1.5	45	48	42	50	1	21	20	1	2	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
31	3	2	2	2	1.56	41	45	39	50	0	22	16.2	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	3	3	0	0	0	2	0	1	0	1	0	13
32	3	1	1	2	170.1	45	48	42	52	0	20	15.57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
33	3	2	1	2	1.65	53	58	48	55	0	20	19.48	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	5
34	3	1	1	2	1.58	65	72	58	55	1	20	26.1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
35	3	1	2	2	1.65	53	54	51	57	0	20	19.48	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
36	3	1	1	2	1.64	50	57	69	55	0	21	18.65	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
37	3	2	1	2	1.65	59	65	65	60	1	21	21.6	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
38	3	1	1	2	1.6	56	60	55	60	1	22	21.87	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
39	3	2	2	2	1.57	43	45	41	55	1	20	17.47	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	1	6
40	3	1	1	2	1.57	53	55	51	50	0	22	21.54	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	1	1	1	2	1.56	45	50	42	50	0	21	18.51	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
42	2	1	1	2	1.48	45	50	40	48	1	20	20.54	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4
43	3	1	1	2	1.60	58	61	56	60	1	20	22.65	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
44	3	1	2	2	1.67	70	72	60	67	1	20	27	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
45	3	1	1	2	1.64	41	42	38	48	0	20	15.29	0	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	1	7
46	3	1	1	1	1.5	50	52	50	45	1	20	22.22	1	1	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	5
47	3	1	1	2	1.54	55	63	54	55	1	20	23.2	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
48	3	1	1	2	1.59	45	55	43	50	0	22	17.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
49	3	1	2	2	1.65	60	72	56	55	0	22	22.05	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	1	2	1	2	1.57	67	60	63.5	53	1	20	27.23	2	1	0	0	0	1	0	0	2	0	0	0	0	2	0	0	0	2	0	1	0	0	0	0	1	0	2	10
51	1	1	1	2	1.55	40	41	39	48	0	20	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
52	1	1	2	2	1.62	50	62	47	60	1	20	19	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
53	3	1	2	2	1.57	61	62	48	55	1	21	24.8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
54	3	1	1	2	1.57	84	84	70	56	1	20	34	3	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
55	3	1	2	2	1.63	52	55	50	63	1	20	19.62	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
56	3	1	1	2	1.64	53	56	50	60	1	21	19.77	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
57	3	1	1	2	1.67	50	50	46	67	1	20	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	3	1	1	2	1.57	45	48	42	45	0	20	18.29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
59	3	1	2	2	1.60	54	62	50	60	1	22	21.09	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
60	3	1	1	2	1.63	67	70	60	64	1	20	25.28	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	6
61	2	1	1	2	1.58	48	52	45	55	1	19	19.27	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	2	1	2	2	1.55	65	68	62	60	1	19	27.08	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	2	1	2	2	1.56	52	58	50	50	0	19	21.39	1	3	0	0	1	0	0	0	1	0	0	0	1	0	0	2	2	0	0	0	0	0	0	2	0	0	0	14
64	2	1	1	2	1.52	43	53	40	50	1	21	18.61	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	1	6
65	2	2	1	2	1.68	64	65	63	58	0	20	15.29	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	9

68	2	1	1	2	1.67	65	68	60	65	1	19	23.38	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	2	1	1	2	1.65	61	67	55	60	1	20	22.42	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
70	2	1	1	2	167.5	47	54	43	60	0	21	16.9	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
71	2	1	1	2	1.60	58	64	53	60	1	20	22.65	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	0	0	3	9
72	1	2	1	1	1.68	75	78	60	62	0	20	26.6	2	2	0	0	0	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	8
73	2	1	1	2	1.62	44	44	42	40	0	20	16.8	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
74	2	2	2	2	1.43	50	55	50	50	2	20	24.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2	0	0	2	2	0	0	2	14
75	1	2	1	1	1.65	65	68	60	65	1	20	23.9	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	2	0	0	0	10
76	2	1	1	2	1.5	43	48	42	50	1	19	19.11	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	1	10
77	2	1	1	2	1.60	53	55	48	50	0	19	20.7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
78	2	1	1	2	1.58	60	63	55	55	1	20	24.49	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
79	2	1	1	2	1.50	62	65	60	52	1	21	27.55	2	2	1	0	0	1	1	1	0	0	2	3	0	2	3	2	2	3	1	2	2	2	0	0	0	0	1	30
80	2	1	1	2	1.60	49	56	45	49	0	19	19.14	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	10
81	2	1	1	1	1.55	53	60	50	55	1	19	20.83	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
82	2	1	1	2	1.52	43	55	43	53	1	19	18.61	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
83	2	1	1	2	1.54	45	49	42	50	1	18	19	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	3	10
84	2	1	1	2	1.524	48	50	43	55	1	19	20.77	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3	1	0	2	0	0	3	0	0	0	1	13
85	2	1	1	2	1.56	52	58	49	55	1	21	21.4	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	2	9
86	2	1	1	2	1.65	62	67	60	65	1	21	22.8	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
87	2	1	1	2	1.65	87	93	70	65	1	21	31.9	3	3	0	0	0	0	0	0	0	0	0	3	3	0	3	0	0	0	0	0	0	0	1	0	0	2	15
88	2	2	2	2	1.63	58	60	55	60	1	20	21.88	1	0	0	0	0	0	0	0	0	0	2	0	3	3	2	0	0	0	0	0	3	2	0	0	0	0	0	16
89	2	2	1	1	1.55	39	45	35	50	1	19	16.25	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	3	8
90	2	1	1	2	1.62	60	65	57	55	0	20	23	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2	0	0	0	0	0	0	6
91	2	1	1	2	1.63	53	60	58	60	1	20	20	1	0	1	0	0	0	3	3	1	0	3	2	3	0	0	3	3	1	3	2	0	3	3	0	0	0	2	36
92	2	1	1	1	1.62	55	58	50	50	0	19	23.8	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
93	2	1	1	1	1.60	57	53	53	55	1	20	22.26	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
94	2	1	1	1	1.52	52	55	50	50	1	20	22.51	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	3	0	0	0	2	0	2	0	9	
95	2	1	1	2	1.42	45	50	43	45	1	19	22.3	1	0	0	0	0	0	1	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
96	2	2	2	2	1.52	46	48	42	50	1	19	20.77	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	3	
97	2	1	1	2	1.54	50	54	48	50	1	19	21.09	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	1	10	
98	2	1	1	2	1.57	48	51	45	50	0	19	19.51	1	2	0	0	2	0	0	0	0	2	2	0	0	0	0		0	2	0	0	1	0	0	0	0	0	0	11	
99	2	1	1	2	1.60	56	52	47.6	58	1	19	19.53	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	12	
100	2	1	1	2	1.54	50	60	50	55	1	25	21.1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	
101	2	1	1	2	1.60	62	64	59	55	1	19	24.21	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	
102	2	1	1	2	1.46	45	55	45	45	1	19	21.12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	
103	2	1	1	2	1.65	64	73	64	65	1	20	23.5	1	0	0	0	0	3	0	3	0	0	0	0	2	0	0	0	0	0	0	3	0	0	0	0	2	0	2	15	
104	2	1	1	1	1.60	58	63	58	55	1	20	22.6	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	2	0	0	0	0	0	0	0	6	
105	2	1	1	2	1.53	45	55	42	50	1	20	19.2	1	0	3	0	0	2	2	0	0	0	0	0	0	0	1	1	0	0	3	0	2	0	2	0	0	0	0	16	
106	2	1	1	2	1.58	49	52	45	50	0	20	21	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	
107	2	1	1	2	1.61	57	59	55	55	0	20	22	1	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	2	8	
108	1	1	1	1	1.62	65	70	60	60	1	19	24.8	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	0	4	

109	2	1	1	2	1.6	56	65	50	55	1	19	21.8	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4
110	2	1	1	2	1.57	58	60	56	50	0	20	23.5	1	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	1	9
111	2	2	2	2	1.55	52	56	46	50	1	20	21.66	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0	1	8
112	2	2	2	1	1.60	58	59	52	55	1	19	22.65	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	7
113	2	1	1	2	1.55	49	52	46	52	1	19	20.4	1	0	0	0	0	1	1	0	2	0	0	0	0	2	0	0	0	0	2	3	0	2	0	1	0	0	1	15
114	2	1	1	2	1.56	55	58	53	55	1	19	22.63	1	3	0	0	0	0	2	1	0	0	3	0	2	0	0	0	0	0	0	1	0	0	0	0	2	0	0	14
115	1	1	1	2	1.62	58	62	50	60	1	17	22.13	1	0	0	0	0	0	0	0	3	0	3	3	0	3	0	3	0	0	3	3	0	0	0	0	0	0	0	21
116	2	1	1	2	1.65	70	73	62	65	1	20	25.73	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
117	2	1	1	2	1.54	53	57	50	53	1	19	22.36	1	0	0	0	0	0	1	0	0	0	0	2	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7
118	1	1	1	2	1.63	68	72	60	65	1	19	25.66	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	3	7
119	2	1	1	2	1.60	51	55	50	55	1	20	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	1	1	1	2	1.65	50	54	50	60	1	17	18.38	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
121	3	1	1	2	1.68	65	68	63	58	0	21	23.04	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
122	3	1	1	2	1.56	54	56	50	54	1	22	22.22	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	5
123	3	1	1	2	1.52	54	55	52	52	1	22	23.37	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
124	3	1	1	2	1.60	61	63	59	61	1	22	23.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
125	3	1	1	2	1.70	50	52	45	55	0	21	17.3	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	2	1	0	0	0	0	0	6
126	1	1	2	2	1.65	58	64	55	60	1	21	21.3	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
127	1	1	1	2	1.62	54	58	50	58	1	18	20.61	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
128	1	1	1	1	1.58	52	55	52	55	1	18	20.88	1	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
129	1	1	2	1	1.60	56	58	49	55	1	18	21.87	1	0	1	0	0	1	0	0	1	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	1	0	0	7
130	1	1	1	2	1.52	54	56	52	50	1	18	23.37	1	0	2	1	0	0	3	0	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	11
131	1	2	1	2	1.66	60	63	55	65	1	18	21.81	1	0	0	0	0	2	1	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	9
132	1	1	1	1	1.56	53	55	51	50	0	17	21.81	1	1	0	0	1	0	0	1	0	1	0	0	1	1	0	0	2	0	0	0	1	0	0	0	0	1	1	11
133	1	2	2	2	1.54	53	57	62	65	2	18	22.36	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
134	1	1	1	2	1.57	43	45	41	55	1	17	17.47	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	3
135	1	1	2	2	1.57	53	55	51	50	0	18	21.54	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
136	1	1	1	2	1.56	45	50	42	50	0	18	18.51	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
137	1	1	1	2	1.48	45	50	40	48	1	18	20.54	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
138	1	1	2	2	1.60	58	61	56	60	1	18	22.65	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	6
139	1	1	2	2	1.67	70	72	60	67	1	18	27	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
140	1	1	1	2	1.64	41	42	38	48	0	17	15.29	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
141	1	2	1	2	1.5	50	52	50	45	1	17	22.22	1	3	0	0	0	0	1	0	2	0	1	3	1	0	3	0	1	1	1	1	0	0	0	1	1	2	2	24
142	1	1	1	2	1.54	55	63	54	55	1	18	23.2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
143	1	1	1	1	1.59	45	55	43	50	0	17	17.85	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
144	1	1	1	2	1.59	45	55	43	50	0	18	17.85	0	2	0	0	0	1	1	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	11
145	1	2	1	2	1.65	60	72	56	55	0	18	22.05	1	2	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
146	1	1	1	2	1.57	67	60	63.5	53	1	18	27.23	2	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	3	3	0	0	0	2	0	1	0	1	0	13
147	1	1	2	2	1.55	40	41	39	48	0	17	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
148	1	1	1	2	1.62	50	62	47	60	1	18	19	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	5
149	1	2	1	2	1.57	61	62	48	55	1	18	24.8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

150	1	1	1	2	1.57	84	84	70	56	1	17	34	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
151	4	2	2	2	1.63	52	55	50	63	1	21	19.62	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
152	4	1	1	2	1.64	53	56	50	60	1	21	19.77	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
153	4	1	1	2	1.67	50	50	46	67	1	21	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
154	4	1	1	1	1.59	56	62	53	57	1	21	22.22	1	1	0	0	2	0	0	1	1	0	1	1	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	12
155	4	2	2	2	1.48	56	58	49	62	2	20	25.57	2	0	0	1	0	2	0	0	3	0	0	1	2	0	0	0	0	1	0	2	0	0	1	0	1	0	2	16
156	4	1	1	2	1.72	65	68	60	65	0	21	22.03	1	2	2	1	1	0	0	1	0	1	0	1	1	1	0	1	0	0	0	0	2	0	0	0	0	2	1	16
157	4	1	1	1	1.60	57	59	55	60	1	20	22.26	1	1	1	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
158	4	1	1	2	1.65	59	60	58	60	1	21	21.69	1	0	1	1	1	1	1	1	0	0	1	1	1	1	0	0	1	0	1	0	0	1	0	0	0	2	0	15
159	4	1	1	2	1.62	60	65	57	55	0	22	23	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	0	0	3	9
160	4	2	1	2	1.63	53	60	58	60	1	21	20	1	2	0	0	0	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	8
161	4	1	1	2	1.62	55	58	50	50	0	21	23.8	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	4
162	4	1	1	2	1.60	57	53	53	55	1	21	22.26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2	0	0	2	2	0	0	2	14
163	4	1	1	2	1.52	52	55	50	50	1	21	22.51	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	2	0	0	0	10
164	4	1	1	2	1.42	45	50	43	45	1	21	22.3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	1	10
165	4	1	2	1	1.52	46	48	42	50	1	20	20.77	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
166	4	2	2	1	1.54	50	54	48	50	1	20	21.09	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
167	4	2	2	1	1.57	48	51	45	50	0	21	19.51	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	1	9
168	4	2	2	2	1.60	56	52	47.6	58	1	21	19.53	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	10
169	4	1	1	2	1.48	55	57	50	46	1	22	25.11	2	1	1	1	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
170	4	2	1	2	1.54	58	60	55	50	1	21	24.47	1	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
171	4	1	1	2	1.63	60	63	58	60	1	21	22.64	1	1	2	3	0	1	0	1	2	0	0	1	1	0	0	1	0	0	0	2	0	0	0	0	0	2	0	17
172	4	1	1	2	1.56	62	65	60	50	0	21	25.51	2	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	2	8
173	4	2	1	2	1.62	58	64	55	62	1	20	22.13	1	0	2	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
174	4	1	1	2	1.75	64	68	58	65	0	21	20.91	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	8
175	4	2	1	2	1.67	62	70	57	65	1	21	22.3	1	1	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
176	4	1	1	2	1.55	53	58	60	50	1	20	22.08	1	1	0	1	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
177	4	2	1	1	1.60	56	58	50	55	1	21	21.8	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
178	4	2	1	1	1.52	49	55	45	50	1	21	19.52	1	0	1	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
179	4	2	1	2	1.63	60	56	65	60	1	21	22.64	1	1	0	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	9
180	4	1	1	2	1.66	62	65	58	62	1	21	22.54	1	1	1	1	1	1	1	0	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	0	0	1	0	13
181	1	1	1	1	1.55	58	58	54	50	1	17	24.16	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
182	1	2	1	2	1.48	50	55	46	45	1	17	22.83	1	1	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	7
183	1	1	1	2	1.57	60	62	54	55	1	17	24.39	1	1	1	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	0	1	1	1	0	0	0	0	11
184	1	1	2	2	1.68	63	65	57	60	0	18	22.34	1	0	2	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	0	9
185	1	1	1	2	1.57	63	65	55	58	1	18	24.39	1	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	1	11
186	1	2	1	2	1.73	65	67	57	65	0	18	22.41	1	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		4
187	1	1	1	2	1.55	49	53	49	50	1	18	20.41	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	5
188	1	1	1	2	1.65	55	60	50	60	1	18	20.22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
189	4	2	2	2	1.75	58	65	54	70	1	21	18.95	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
190	4	1	1	2	1.60	53	55	53	55	1	22	20.7	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2

191	4	1	1	2	1.60	64	64	58	58	1	21	25	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
192	4	1	1	2	1.60	64	66	60	58	1	21	25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
193	1	1	1	2	1.57	35	38	34	45	0	18	14.22	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	1	6
194	1	1	1	2	1.56	57	60	54	56	1	17	23.45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
195	1	1	1	2	1.70	53	65	53	55	0	17	18.33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
196	1	1	1	2	1.6	60	62	55	57	1	18	23.43	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4
197	1	1	1	2	1.60	62	64	59	55	1	18	24.21	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	0	0	3	9
198	1	1	2	1	1.46	45	55	45	45	1	18	21.12	1	2	0	0	0	1	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	8
199	1	2	2	2	1.65	64	73	64	65	1	18	23.5	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	4
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201	1	1	1	2	1.53	45	55	42	50	1	17	19.2	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	2	0	0	0	10
202	1	1	1	2	1.58	49	52	45	50	0	17	21	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	1	10
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Behavioral Questions					Total	GAD 7							Total	HAM - A													Total
Question 1	Question2	Question3	Question4	Question5		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12	Item 13	Item 14	
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0	0	0	0	0	absent	2	1	1	0	0	1	1	6																
0	1	0	4	0	present	2	2	2	2	1	2	2	13	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	5
0	0	0	0	0	absent	1	1	1	0	2	0	0	5																
0	0	0	0	0	absent	0	0	1	1	1	0	0	3																
0	0	1	0	0	present	1	2	1	0	0	0	0	4																