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Prevalence and associated factors of panic disorder among medical students in Abha University, Abha, Saudi Arabia, 2020: A cross-sectional study

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***Abstract*---**Objective: To assess the prevalence of panic disorder and identify factors associated with their occurrence among medical students, King Khaled University, Abha, Saudi Arabia. Methods: This study was a cross-sectional including 400 participants, conducted in Abha city by distributing a validated self-constricted questionnaire among medical students, King Khaled University, Abha, Saudi Arabia during 2020-2021. The questionnaire consisted of three parts (Demographic data, Panic disorders severity scale (PDSS), and Patient Health Questionnaire –Panic Disorder (PHQ-PD). Results: Out of 400 medical students, 196 (50.5%) were male and 192 (495%) were female , with mean age score 22.5±2.1. The rate of cases were as following; 114 (29.4%) had anxiety, 190 (49.0%) had 4 or more symptoms, and 104 (26.8%) had panic disorder. The mean score of PDSS was indicating the need for a formal diagnostic assessment. Those in 2nd and 6th year, and those who rent their house had significant higher score of PDSS than others (p<0.0001, and p0.001) respectively. Also, younger age, and those who had low monthly income had significant higher rate of panic disorder attack than others (p<0.0001and p<0.0001) respectively. Conclusions: The rate of panic attack among medical students was fourth of the cases. Where, the mean score of PDSS was indicating the need for a formal diagnostic assessment. Decision makers and administrators in colleges and universities requested to give more attention to improve the environment to make the students more relax and comfort, particularly for younger age, those who were in 2nd and 6th academic years, those who had low monthly income, and those who lived in renting house. Encourage medical students to talk about panic disorders attack with their mentors.

***Keywords*---**panic disorders attack, medical students, panic disorders

severity scale (PDSS), patient health questionnaire –panic disorder (PHQ-PD).

Introduction

Over the world college students may suffer from mental health problems.(1,2) Where several causes could lead to these kind of health issues, in traditional students the main reasons for this due to their young age and their depending on the parents for financial support, (3) so, these young students must face academic load stress as well as face the task of adult-like responsibilities without enough skills and cognitive maturity of adulthood. While non- traditional students usually older , employed full-time, and may have family responsibility. (4) so, this group of students need to balance between job demands, family responsibilities as well as academic requirements. In these situations, many college students may experience the continues, exacerbation, or first onset of mental health and substance use problems. (1)

The common peak onset of mental health disorders happens during young adulthood. Where 75% of individuals with mental health disorder have this condition at the first time by the age of 25 years, (1,5) One of the most common psychiatric problems among college students is anxiety disorders with approximately 11.9 %. (1,2) Among the anxiety disorders, social phobia has an early age of beginning (median age of onset between 7–14 years), while panic disorder, generalized anxiety disorders (GAD), and post-traumatic stress disorder (PTSD) have delayed onsets at the age of 16-17. (1,6) Panic disorder (PD) is a common anxiety disorder that is associated with financial burden, considerable impairment, and comorbidity (Kessler et al., 2006) with high comorbidity (70%).(7-9)

Regarding International Classification of Diseases (ICD) and the Diagnostic and Statistical Manual of Mental Disorders (DSM) panic disorder presenting with mainly somatic symptoms.(10) from these physiological disorders (digestive problems, cardiovascular risk, heart disease, high blood pressure, headaches, and musculoskeletal disorders), (9,11) as well as psychological disorders (social phobia, depression, and a high suicide rate). (9,12)

A panic attack defines as “the sudden onset of intense fear or terror, often associated with feelings of impending doom, that is not a result of a real danger. Some of the most common symptoms experienced during an attack are: dizziness, shortness of breath, chest pain or discomfort, and trembling or shaking. A panic attack is different from anxiety, feelings of fear, or worry that build up over time, and also differs from moderate feelings of fear or anxiety. Rather, it involves quick hitting feelings of extreme terror or fear”. (13)

In respect to a meta-analysis of 12 general population studies in Europe, the incidence rate of PD is 1.8%, ranging from 0.7% to 3.1% annually. (9,14) Another study reported that lifetime prevalence of PD for several countries combined was 13.2%. (15) There are several reliable self-report screening psychological instruments in order to help physicians in looking for psychological symptoms

and improving their capacities to diagnose mental illness. Where, self-report questionnaires can provide a truthful diagnosis that is equally valid to the structured interviews. (16) From these instruments patient health questionnaire – panic disorder (PHQ-PD) which help in the diagnosis, (9) and the Panic Disorder Severity Scale (PDSS) which help in diagnosis and assess overall severity. (17) Several studies were conducted about mental health problem particularly anxiety, depression, and panic disorder among college students. (18-21)

In 1997, Messenger conducted a case-control study to compare individuals experiencing panic attacks to non panickers during stressful tasks to determine whether similar response patterns would happen. College students were screen for participation during Mass Testing and were divided to three groups : 1) panic(20 students), 2) no panic/high anxiety sensitivity (18 students), and 3) no panic/low anxiety sensitivity(18 students). Twenty panickers, controls were asked to complete two stressful tasks, each lasting five minutes. Results showed significant group differences with regard to somatic symptoms, subjective anxiety, and the number of catastrophic cognitions reported during the physical exertion task, with panickers and no panic/high anxiety sensitivity recording the greatest distress in all cases. These findings support the current theoretical model of panic, as well as a relationship between panic and anxiety sensitivity. (18)

In 2003 , in Iran Nazemi and his colleagues conducted a cross sectional study to detect the parameters of panic, fear, and avoidance among 347 university students in Iran. Data were collected using Farsi translations of five scales; the Panic Attack Questionnaire, State-Trait Anxiety Inventory, Taylor Manifest Anxiety Scale, Beck Depression Inventory, and Anxiety Sensitivity Index. The result revealed that 38% had panic attacks before a year and 21.4% reported panic attacks in the past 4 weeks when encouraged by a wide definition of panic. Male and those with unexpected panic stated more panic severity whereas female with panic attacks stated greater situational fear and avoidance. The findings provide uncertain support for cross-cultural likeness in panic phenomenology and the validity of *DSM-III-R* PD criteria among university students in Iran. (19)

In 2016, in USA, Auerbach and his colleagues conducted a cross-national series of community epidemiological surveys to detect the prevalence of mental disorders among college students. They used the World Health Organization World Mental Health Surveys to examine the associations of mental disorders with college entry and attrition by comparing college students (n = 1,572) and nonstudents in the same age range (18–22; n = 4,178), based on surveys in 21 countries (5 upper middle-income, 4 low/lower-middle income, 11 high income, and1 lower-middle or upper-middle at the times of two different surveys). Lifetime and 12-month prevalence and age-of-onset of DSM-IV anxiety, mood, behavioral and substance disorders were assessed with the Composite International Diagnostic Interview. The results revealed that 20.3% of college students had 12-month DSM-IV/CIDI disorders. Where, 83.1% of these cases had pre-matriculation onsets. Disorders with pre-matriculation onsets were more critical than those with post-matriculation onsets in expecting subsequent college attrition, with substance disorders and, among women, major depression the most important such disorders, while panic disorder was found in 28.1% of the male students and 80.0% among female students. Only 16.4% of students with 12-month disorders

received any 12-month healthcare treatment for their mental disorders. They concluded that Mental disorders are common among college students, have onsets that mostly occur prior to college entry. Detection and effective treatment of these disorders early in the college career might decrease attrition and improve educational and psychosocial functioning. (20)

In 2017 , in Egypt, Abolmagd and his colleagues conducted a cross sectional study to assess psychiatric morbidity among final year medical students from the Faculty of Medicine, Cairo University. They chose 200 students were randomly from psychiatry round. All Participants were subject to clinical assessment using the semi-structured interview of Present State Examination (PSE). The results revealed that the mean value of age was 23.21±1.09 years. None of the students in the sample were diagnosed as having any of the psychotic disorders. Overall, 83 and 44% of students in the sample had subclinical mood and anxiety symptoms, respectively, and only 1% had panic disorder. They concluded that most students had anxiety and depressive symptoms. (21)

In 2017, in Saudi Arabia, Amr and his colleagues conducted a cross-sectional study among 1696 college students. They aimed to estimate the prevalence of mental health problems and associated factors among undergraduate college students at King Faisal University, Saudi Arabia They used (PHQ) questionnaire The result showed that the prevalence of symptoms of depression or anxiety was 21.9%. Symptoms of major depression were present in 9.9%, other depression in 19.4% and any depression among 24.4%. Panic and generalized anxiety symptoms were found in 4.0% and in 14.0% respectively. Suicidal ideation in the past four weeks was reported by 1.1% of students. Major depression and anxiety were significantly higher among females. Multivariate regression logistic models revealed that the type of college (nature of received education), female gender, financial and personal problems were significant predictors for major depression. They concluded that there is need for address mental health problems in young adult populations, mainly among those of lower socioeconomic status. (22)

University students particularly medical students experience extremely load of responsibilities, which put them under huge stress and make them vulnerable for anxiety, depression and panic attack. With the possibility to misdiagnosis and receive inadequate treatment or never received. Through this study we aim to evaluate magnitude of panic disorder and identify risk factors associated with their occurrence among medical students, King Khaled University, Abha, Saudi Arabia.

Methodology (Materials and Methods)

This study was a cross-sectional, analytic study carried out among medical student of King Khalid University, Abha city. Abha is the capital of 'Asir Region in Saudi Arabia. It is situated 2,270 metres (7,450 feet) above sea level in the fertile Asir Mountains of south-western Saudi Arabia, near Asir National Park. Abha's mild climate makes it a popular tourist destination for Saudis.(23) King Khalid University is a public university in Abha, Saudi Arabia. On Tuesday 9 January 1419 AH (06/05/1998 AD) HRH Crown Prince ordered the merger of Imam Mohammad Ibn Saud Islamic University and King Saud University in the

Southern Region into one entity under the new identity of 'King Khalid University'. (24) Medical college was established in 1400 , it was following King Saud University, and in 1419 it became one of the colleges of King Khalid university. (25)

The study was approved by the research ethics committee at King Khalid University (HAPO-06-B-001 with approval number ECM#2020-1006). Also, a written permission from Joint Program of Family Medicine director was obtained. Written consents from all participants were obtained. All collected data was kept confidentially in the researcher office. The sample size calculated by using RAOSFT sample size calculator assuming a 95% confidence level 5%, margin of error and 50% probability of prevalence. The total number of student is 1000. The minimum calculated sample was 400.

The researcher choose the participant by simple random technique.
First step: each academic year divided to two groups regarding gender : female group and male group (10 groups : 5 male and 5 female)..
Second step: each gender group (5 male groups and 5 female groups) 1 divided into five group, which mean 50 groups; 25 male groups and 25 female groups.
Third step: the researcher asked the students in each group to participate until reach the sample size. (Figure 1)

Data collection tool (instrument)

A valid self-administered English questionnaire was used to collect the data. The first page included research title and research name, contacts and consent of participant written. Other will be section included:

- Demographics: age, gender, marital status, and living status (alone or with family).
- Patient Health Questionnaire –Panic Disorder (PHQ-PD), consists of 2 part and 15 items, with a general question about the level of difficult to do daily work with four choices. The PHQ—PD subscale (PHQ-PD)—is a main diagnostic tool used to detect PD. In the original study the authors assessed the operating characteristics of the test, they found high sensitivity and specificity, where sensitivity of .81—significantly higher than the same measure obtained with the PRIME-MD test, and a specificity of .99, equal to the PRIME-MD. Patient who responded positively to the first 4 questions on the test and report 4 or more symptoms are considered to have a probable diagnosis of PD. (9,26)
- Panic Disorder Severity Scale (PDSS) consists of 7 items. Each item scored from 0 to 4 based on self-reported frequency of the feeling addressed by each item. The Panic Disorder Severity Scale (PDSS) was developed in 1997.It is a 7-item with scale of 4 choices from 0 (no) to 4 (extremely), it is a clinician administered assessment of panic disorder and agoraphobia symptom severity It can be used as self-reported questionnaire, where it became a commonly used standard measure. (7,17)

The researcher distributed questionnaires to student with the help of male and female group leader. After researcher attending one of enjoyable and useful

medical college lecture at main auditorium in medical college, she took the permeation from lecturer to distribute questionnaires, the questionnaires were collected at same day, and numbering manually after that.

All collected data was coded and entered into a personal computer. Data entry and statistical analysis performed by using the Statistical Product and Service Solutions (SPSS, version 22.0) and appropriate statistical tests were applied. Descriptive statistics (i.e., frequency, percentage, mean and standard deviation) calculated. Independent t test and one way ANOVA were used for comparison. . P –value < 0.05 was considered as significant.

Result

Demographic data

Out of 400 medical students, 203 (50.8%) were male and 197 (49.2%) were female , with mean age score 22.5±2.1. The majority 320 (82.5%) were single, and 325 (81.3%) had monthly income <3000 SR. Less than two third 246 (61.5%) reported owned their resident place, and 310 (77.5%) living with their parents. (Table 1)

Patient Health Questionnaire –Panic Disorder (PHQ-PD)

Regarding anxiety questions , less than half (<50%) reported “yes” for the 4 questions. The most common symptoms were;187 (46.8%) “Palpitations, pounding heart, or accelerated heart rate.”, followed by 183 (45.8%) “Sensations of shortness of breath or smothering.”, then 159 (39.8%) “Feeling dizzy, unsteady, light-headed, or faint.”. While the least common symptoms was 113 (28.3%) ” Chills or heat sensations”. Regarding the question of having problem almost the half 197 (49.3%) reported “Not difficult at all “, followed by 128 (32.0%) “Somewhat difficult ”, then 58 (14.5%) “Very difficult ”, and lastly 17 (4.2%) “Extremely difficult”. The rate of cases were as following; 116 (29.0%) had anxiety, 197 (49.3%) had 4 or more symptoms, and 106 (26.5%) had panic disorder. (Table 2 and Figures 1-4)

Panic Disorder Severity Scale (PDSS)

The mean score of PDSS was 9.4±5.1, indicating the need for a formal diagnostic assessment. The details answers of the seven questions presented in the table down. (Table3)

The relation between Panic Disorder Severity Scale and demographic data

The result revealed a significant difference in PDSS score regarding (resident, and academic year), where, those in 2nd and 6th year, and those who rent their house had higher score of PDSS than others ($p<0.0001$, and $p<0.0001$) respectively. Also, there was a significant negative correlation between age and PDSS score ($p<0.0001$). On the other hand, there was no significant difference regarding the rest demographic data (gender, monthly income, marital status, and living with who). (Table 4 and Figure 5)

The relation between Patient Health Questionnaire–Panic Disorder and demographic data

The result revealed a significant association between Patient Health Questionnaire –Panic Disorder and demographic data (age, resident, monthly and academic year), where, younger age those in 2nd year, those who had low monthly income, and those who rent their house had higher rate of panic disorder attack than others ($p<0.0001$, $p<0.0001$, $p<0.0001$, and $p<0.0001$) respectively. On the other hand, there was no significant difference regarding the rest demographic data (gender, marital status, and living with who). (Table 5 and Figure 6)

Discussion

Medical education is known as being stressful. It is labelled by many psychological changes in students. Where, medical students face multiple anxieties in converting from insecure student to young knowledgeable physician. There is a growing attention about stress and existing in medical training. It was noted that medical students experience a high popularity of personal distress during their undergraduate course. High stress have a negative influence on professionally of the academic curriculum. Stress, health, and emotional troubles grow during the duration of undergraduate medical education. This can cause mental problem and has a negative impact on cognitive functioning and learning. (21)

Panic disorder, with or without agoraphobia (PDA or PD, respectively), is a commonly occurring public health problem around the world.This is also true for Saudis where the present study was carried out. Like all other places, PD is associated with high rates of comorbidity and functional weakness and tends to be a chronic course, regardless the availability ofevidence-based treatments. To decrease the high burden of illness associated with PD, it is important that persons with the disorder are identified, provided with treatment, and observed carefully the severity of their symptoms. (27-30) The present study aimed to assess the prevalence of panic disorder and identify factors associated with their occurrence among medical students.

Results of this study showed that fourth of the medical students had panic disorder attack, and less than third had anxiety attack. The prevalence of panic disorder have been reported by several studies, which are higher than Amr et al. study in Saudi Arabia, reported that only (4.0%) of university students had panic disorder.(22) , similar result was reported by Adhikariet al, in Nepal , where(4.1%) medical students reported panic disorders. (31) and the study of Nazemi et al., in Iran, reported that (7.1%) of universities students reported panic disorder.(19) The study of Auerbach et al., in USA, reported that the prevalence of anxiety disorders among all groups were(11.7–14.7%), while the prevalence of panic disorders among all groups were(1.0–1.2%). (20) Abolmagdet al., in Egypt, reported that only (2%) of medical students had panic attack.(21) While in Samreen et al,. study in saudi Arabia, the prevalence of anxiety among pharmacy students was 49% . (32)

This result showed that panic disorders attack are a common problem and have been reported by several studies among medical and non- medical students. The prevalence of cases with 4 or more symptoms were almost the half (49.3%) . Where, the most common symptoms were; “Palpitations, pounding heart, or accelerated heart rate.”, “Sensations of shortness of breath or smothering.”, and “Feeling dizzy, unsteady, light-headed, or faint.”. While the least common symptoms was” Chills or heat sensations”. This result is higher than the study of Bililign et al., in Raya Kobo District, Ethiopia, found that the rate of medium to highly severe somatic symptoms was 22.4%, (31) and, in germany study the rate was 15%. (33) The study of Nazemi et al., in Iran, found that the most common symptoms were Palpitations, sweating, and trembling.(19) This differences in the percentage could be due to several factors such as socio-economic factors, sample size, studies nature, and differences in translation and interpretation.

Findings of the present study showed that the mean score of PDSS (≥ 9) indicating the need for a formal diagnostic assessment. The PDSS has performed well and meets the need for a reliable global assessment. The instrument, modeled after the Yale-Brown Obsessive Compulsive Scale, consists of seven items, each rated on a 0 to 4 scale (0 denoting none, and higher ratings reflecting greater degrees of symptom severity.) The items assess frequency of panic attacks, distress caused by panic attacks, anticipatory anxiety, agoraphobic fear/avoidance, panic-related sensation fear/avoidance, and work and social impairment. (34)

Findings of the present study showed that medical students who had more rate and severity of panic attack were younger age, those who were in 2nd and 6th academic years, those who had low monthly income, and those who lived in renting house. According to academic years, this could be due to the fact that 2nd year students are new in the environment and still not harmonize with it and its responsibilities. While, for 6th year students, the burden of the study and that year is the last year before graduate and enter job world.

Regarding age factor, this result could be because younger age don’t have enough experience to deal with the responsibilities and requirements of college life. In the respect to renting house and low monthly income, this could be due to the financial burdens, and how to deal with financial requirements of college life and personal life. The study of Nazemi et al., in Iran no significant difference in panic attack regarding gender and cities. (19) Amr et al. study in Saudi Arabia, reported that being married and living with families were protective factors reduce significantly the rate of panic attack. While, being male, and having financial problems were risk factors and increase significantly the rate of panic attack. (22) Overall, the past two decades have witnessed significant progress in understanding of the prevalence, characteristics, and consequences of panic attacks.

Limitations of the study

Time constraints, the researcher finished the data collection within one month only and this study was conducted only in one medical college, Abha.

Conclusion and Recommendation

Fourth of the medical students had panic disorder attack, while less than third had anxiety attack. The most common symptoms were; “Palpitations, pounding heart, or accelerated heart rate.”, “Sensations of shortness of breath or smothering.”, and “Feeling dizzy, unsteady, light-headed, or faint.”. While the least common symptoms was” Chills or heat sensations”. The mean score of PDSS indicating the need for a formal diagnostic assessment. Medical students who had more rate and severity of panic attack were younger age, those who were in 2nd and 6th academic years, those who had low monthly income, and those who lived in renting house. Decision makers and administrators in colleges and universities requested to give more attention to improve the environment to make the students more relax and comfort, particularly for younger age, those who were in 2nd and 6th academic years, those who had low monthly income, and those who lived in renting house. Encourage medical students to talk about panic disorders attack with their mentors. Further nation-wide studies on assessment of the prevalence and associated risk factors among medical students regarding panic disorders attack need to be conducted in larger sample size, other colleges, universities, and regions other than Abha, so as to identify the prevalence and risk factors.

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Table (1) Demographic data

Variable	N	%
Gender		
Female	197	49.2
Male	203	50.8
Marital status		
Single	330	82.5
Married	64	16.0
Divorced	4	1.0
Widowed	2	.5
Academic year		
2nd	88	22.0
3rd	64	16.0
4th	109	27.3
5th	46	11.5
6th	93	23.3
Monthly income		
<3000	325	81.3
3000-5000	20	5.0
5000-7000	8	2.0
7000-9000	14	3.5
9000-11000	17	4.3
>11000	16	4.0
Resident		
Owned	246	61.5
Rent	154	38.5
Living with		
Friends	34	8.5
Husband/wife	56	14.0
Parents	310	77.5
Variable	Mean± SD	Rang (min-max)
Age	22.5±2.1	(18-35)

Data presented as number (%) or as Mean± SD

Table (2) Patient Health Questionnaire –Panic Disorder (PHQ-PD)

Variable	N	%
QUESTIONS ABOUT ANXIETY		
In the last 4 weeks have you had an anxiety attack suddenly feeling fear or panic?		
No	201	50.3
Yes	199	49.7
Has this ever happened before?		
No	232	58.0
Yes	168	42.0
Do some of these attacks come suddenly out of the blue-that is, in situation where you expect to be nervous or uncomfortable?		
No	224	56.0
Yes	176	44.0
Do these attacks bother you a lot or are you worried about having another attack?		
No	220	55.0
Yes	180	45.0
QUESTIONS ABOUT LAST PANIC ATTACK		
Think about the last panic attack, During your last bad anxiety attack, did you have symptoms like#		
Sensations of shortness of breath or smothering.	183	45.8
Sweating.	155	38.8
Palpitations, pounding heart, or accelerated heart rate.	187	46.8
Feeling dizzy, unsteady, light-headed, or faint.	159	39.8
Paresthesias (numbness or tingling sensations).	127	31.8
Nausea or abdominal distress.	135	33.8
Trembling or shaking.	137	34.3
Feelings of choking.	130	32.5
Chest pain or discomfort.	116	29.0
Chills or heat sensations.	113	28.3
Fear of dying.	118	29.5
Fear of losing control or going crazy	139	35.0
Feelings of unreality	116	29.0
If you checked off any problems on this questionnaire so far, how difficult are these problems made it for you to do your work, take care of things at home, or get along with other people		
Not difficult at all	197	49.3
Somewhat difficult	128	32.0
Very difficult	58	14.5
Extremely difficult	17	4.2
Anxiety cases	116	29.0
≥4 symptoms cases	197	49.3
Panic Disorder cases	106	26.5

Data presented as number (%)
Multiple response

Table (3) Panic Disorder Severity Scale (PDSS)

Variable	N	%
1. How many panic and limited symptoms attacks did you have during the week?		
No panic or limited symptom episodes	217	54.3
Mild: no full panic attacks and no more than 1 limited symptom attack/day	75	18.8
Moderate: 1 or 2 full panic attacks and/or multiple limited symptom attacks/day	74	18.5
Severe: more than 2 full attacks but not more than 1/day on average	22	5.5
Extreme: full panic attacks occurred more than once a day, more days than not	12	3.0
2. If you had any panic attacks during the past week, how distressing (uncomfortable, frightening) were they, while they were happening? (If you had more than one, give an average rating. If you didn't have any panic attacks but did have limited symptom attacks, answer for the limited symptom attacks.)		
Not at all distressing, or no panic or limited symptom attacks during the past week	207	51.8
Mildly distressing (not too intense)	90	22.5
Moderately distressing (intense, but still manageable)	78	19.5
Severely distressing (very intense)	11	2.8
Extremely distressing (extreme distress during all attacks)	14	3.5
3. During the past week, how much have you worried or felt anxious about when your next panic attack would occur or about fears related to the attacks (for example, that they could mean you have physical or mental health problems or could cause you social embarrassment)?		
Not at all	197	49.3
Occasionally or only mildly	70	17.5
Frequently or moderately	67	16.8
Very often or to a very disturbing degree	48	12.0
Nearly constantly and to a disabling extent	18	4.5
4. During the past week were there any places or situations (e.g., public transportation, movie theaters, crowds, bridges, tunnels, shopping malls, being alone) you avoided, or felt afraid of (uncomfortable in, wanted to avoid or leave), because of fear of having a panic attack? Are there any other situations that you would have avoided or been afraid of if they had come up during the week, for the same reason? If yes to either question, please rate your level of fear and avoidance this past week.		
None: no fear or avoidance	210	52.5
Mild: occasional fear and/or avoidance but I could usually confront or endure the situation. There was little or no modification of my lifestyle due to this.	83	20.8
Moderate: noticeable fear and/or avoidance but still manageable. I avoided some situations, but I could confront them with a companion. There was some modification of my lifestyle because of this, but my overall functioning was not impaired.	67	16.8
Severe: extensive avoidance. Substantial modification of my lifestyle was required to accommodate the avoidance making it	30	7.5

difficult to manage usual activities.		
Extreme: pervasive disabling fear and/or avoidance. Extensive modification in my lifestyle was required such that important tasks were not performed.	10	2.5
5. During the past week, were there any activities (e.g., physical exertion, sexual relations, taking a hot shower or bath, drinking coffee, watching an exciting or scary movie) that you avoided, or felt afraid of (uncomfortable doing, wanted to avoid or stop), because they caused physical sensations like those you feel during panic attacks or that you were afraid might trigger a panic attack? Are there any other activities that you would have avoided or been afraid of if they had come up during the week for that reason? If yes to either question, please rate your level of fear and avoidance of those activities this past week.		
No fear or avoidance of situations or activities because of distressing physical sensations	190	47.5
Mild: occasional fear and/or avoidance, but usually I could confront or endure with little distress activities that cause physical sensations. There was little modification of my lifestyle due to this.	108	27.0
Moderate: noticeable avoidance but still manageable. There was definite, but limited, modification of my lifestyle such that my overall functioning was not impaired.	68	17.0
Severe: extensive avoidance. There was substantial modification of my lifestyle or interference in my functioning.	18	4.5
Extreme: pervasive and disabling avoidance. There was extensive modification in my lifestyle due to this such that important tasks or activities were not performed.	16	4.0
6. During the past week, how much did the above symptoms altogether (panic and limited symptom attacks, worry about attacks, and fear of situations and activities because of attacks) interfere with your ability to work or carry out your responsibilities at home? (If your work or home responsibilities were less than usual this past week, answer how you think you would have done if the responsibilities had been usual.)		
No interference with work or home responsibilities	210	52.5
Slight interference with work or home responsibilities, but I could do nearly everything I could if I didn't have these problems.	80	20.0
Significant interference with work or home responsibilities, but I still could manage to do the things I needed to do.	52	13.0
Substantial impairment in work or home responsibilities; there were many important things I couldn't do because of these problems.	44	11.0
Extreme, incapacitating impairment such that I was essentially unable to manage any work or home responsibilities.	14	3.5
7. During the past week, how much did panic and limited symptom attacks, worry about attacks, and fear of situations and activities because of attacks interfere with your social life? (If you didn't have many opportunities to socialize this past week, answer how you think you would have done if you did have opportunities.)		
No interference	197	49.2

Slight interference with social activities, but I could do nearly everything I could if I didn't have these problems.	72	18.0
Significant interference with social activities but I could manage to do most things if I made the effort.	51	12.8
Substantial impairment in social activities; there are many social things I couldn't do because of these problems.	64	16.0
Extreme, incapacitating impairment, such that there was hardly anything social I could do.	16	4.0
Variable	Mean± SD	Rang (min-max)
PDSS score	9.4±5.1	(3-24)

Data presented as number (%) or as Mean± SD

Table (4) The relation between Panic Disorder Severity Scale and demographic data

Variable	Mean	SD	P value
Gender$			
Female	9.5598	5.20684	0.426
Male	9.2021	5.01459	
Marital status#			
Single	9.2677	5.23270	0.617
Married	9.7500	4.61322	
Divorced	12.0000	0.00000	
Widowed	11.0000	0.00000	
Academic year#			
2nd	12.4048	5.13931	0.0001**
3rd	8. 4268	5.04175	
4th	8.4706	4.75687	
5th	8.0909	5.25542	
6th	8. 9333	4.30053	
Monthly income#			
<3000	9.4305	5.24168	0.082
3000-5000	9.0000	2.86540	
5000-7000	6.3333	2.06559	
7000-9000	6.5714	2.34404	
9000-11000	11.0000	3.41940	
>11000	11.0625	7.08490	
Resident$			
Owned	8.6974	4.70735	0.0001**
Rent	10.4583	5.52917	
Living with#			
Friends	9.0000	5.74156	0.867
Husband/wife	9.6154	4.58537	
Parents	9.3759	5.14160	
Variable	PDSS		
Age @	r	P value	

	-0.193	0.0001**

Data presented as Mean± SD
$Comparison was done using independent t test
#Comparison was done using one way ANOVA
@Comparison was done using Pearson correlation
*P value < 0.05 considered as significant
**P value < 0.05 considered as extremely significant

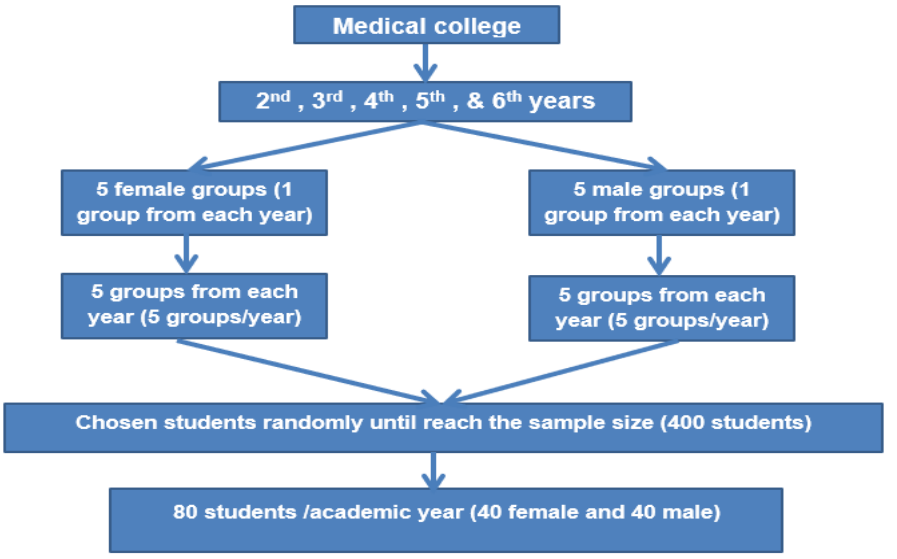
Table (5) The relation between Patient Health Questionnaire –Panic Disorder and demographic data

Variable	Panic Disorder Attack		P value
	No	Yes	
Gender^^			
Female	150 51.0%	47 44.3%	0.143
Male	144 49.0%	59 55.7%	
Marital status^^			
Single	242 82.3%	88 83.0%	0.286
Married	46 15.6%	18 17.0%	
Divorced	4 1.4%	0 0.0%	
Widowed	2 .7%	0 0.0%	
Academic year^^			
2nd	32 10.9%	56 52.8%	0.0001**
3rd	54 18.4%	10 9.4%	
4th	90 30.6%	19 17.9%	
5th	42 14.3%	4 3.8%	
6th	76 25.9%	17 16.0%	
Monthly income^^			
<3000	225 76.5%	100 94.3%	0.0001**
3000-5000	20 6.8%	0 0.0%	
5000-7000	8 2.7%	0 0.0%	
7000-9000	14 4.8%	0 0.0%	
9000-11000	15	2	

	5.1%	1.9%	
>11000	12 4.1%	4 3.8%	
Resident^^			
Owned	202 68.7%	44 41.5%	0.0001**
Rent	92 31.3%	62 58.5%	
Living with^^			
Friends	30 10.2%	4 3.8%	0.186
Husband/wife	38 12.9%	18 17.0%	
Parents	226 76.9%	84 79.2%	
Variable	Age$		P value
	Mean	SD	
No	22.8592	2.09523	0.0001**
Yes	21.6827	1.77504	

Data presented as number (%) or as Mean± SD
$Comparison was done using independent t test
^^Comparison was done using Chi square
*P value < 0.05 considered as significant
**P value < 0.05 considered as extremely significant

Figure (1): Sampling technique



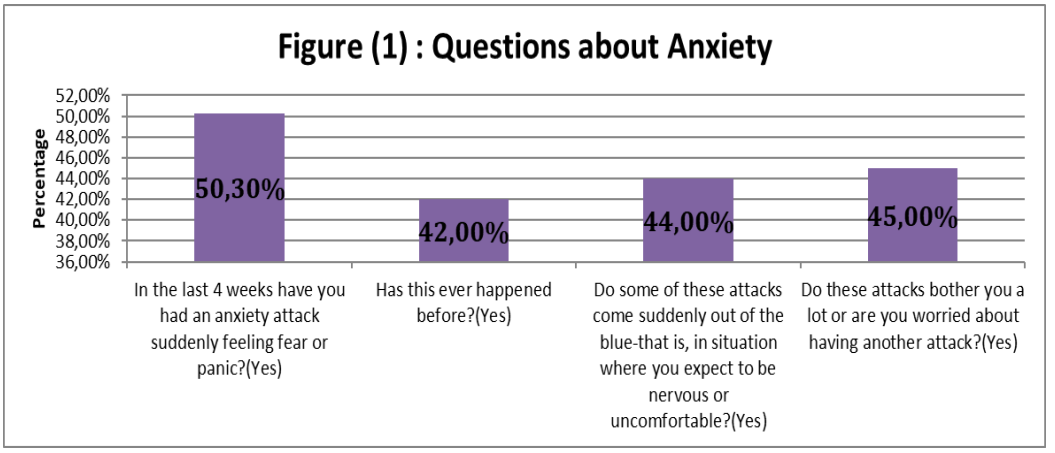


Figure (1) : Questions about Anxiety
Percentage
52,00%
50,00%
48,00%
46,00%
44,00%
42,00%
40,00%
38,00%
36,00%
50,30%
42,00%
44,00%
45,00%
In the last 4 weeks have you had an anxiety attack suddenly feeling fear or panic?(Yes)
Has this ever happened before?(Yes)
Do some of these attacks come suddenly out of the blue-that is, in situation where you expect to be nervous or uncomfortable?(Yes)
Do these attacks bother you a lot or are you worried about having another attack?(Yes)

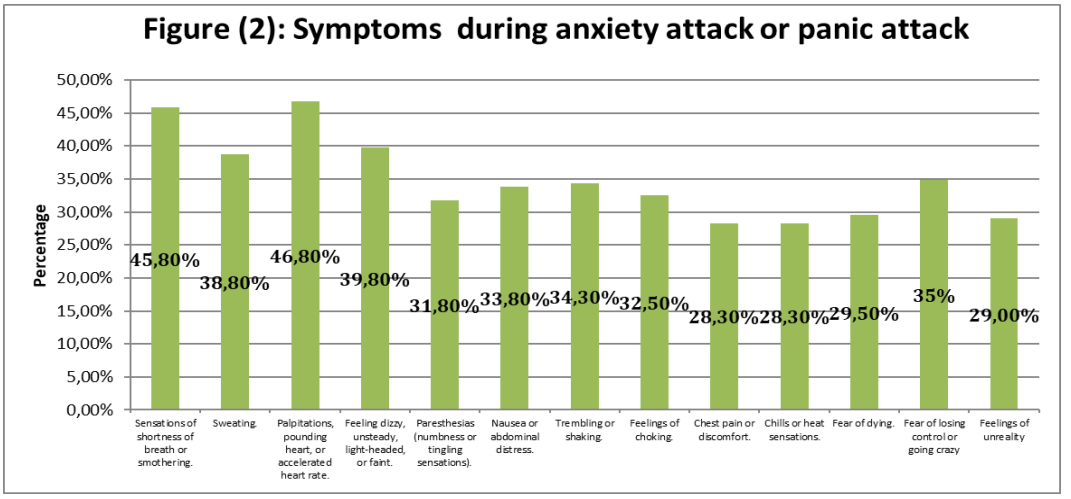


Figure (2): Symptoms during anxiety attack or panic attack
Percentage
50,00%
45,00%
40,00%
35,00%
30,00%
25,00%
20,00%
15,00%
10,00%
5,00%
0,00%
45,80%
38,80%
46,80%
39,80%
31,80%
33,80%
34,30%
32,50%
28,30%
28,30%
29,50%
35%
29,00%
Sensations of shortness of breath or smothering.
Sweating.
Palpitations, pounding heart, or accelerated heart rate.
Feeling dizzy, unsteady, light-headed, or faint.
Paresthesias (numbness or tingling sensations).
Nausea or abdominal distress.
Trembling or shaking.
Feelings of choking.
Chest pain or discomfort.
Chills or heat sensations.
Fear of dying.
Fear of losing control or going crazy
Feelings of unreality

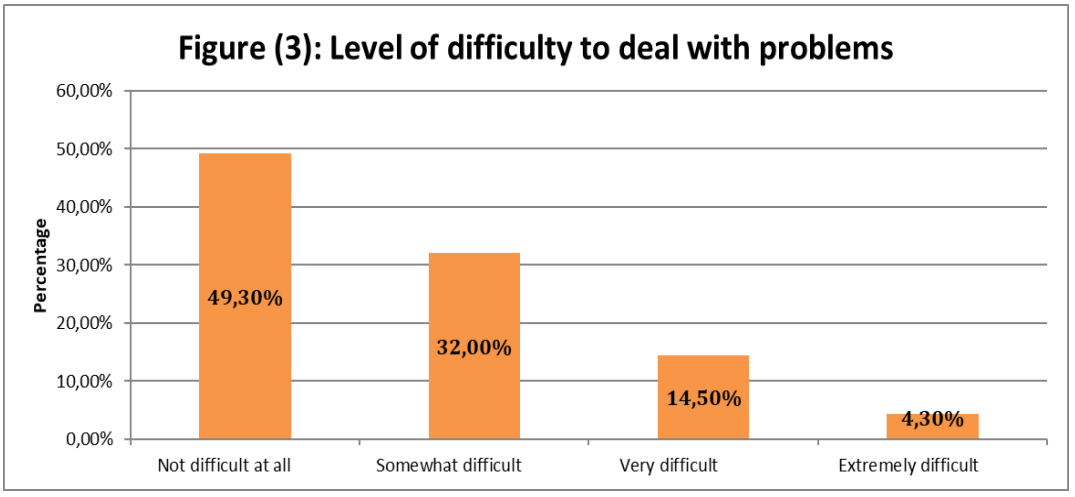


Figure (3): Level of difficulty to deal with problems
Percentage
60,00%
50,00%
40,00%
30,00%
20,00%
10,00%
0,00%
49,30%
32,00%
14,50%
4,30%
Not difficult at all
Somewhat difficult
Very difficult
Extremely difficult

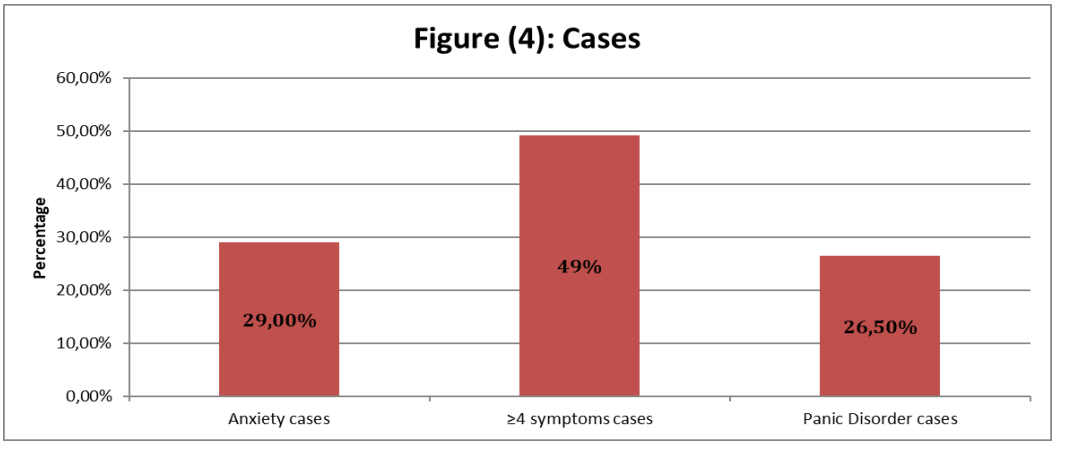


Figure (4): Cases
60,00%
50,00%
40,00%
30,00%
20,00%
10,00%
0,00%
Percentage
29,00%
49%
26,50%
Anxiety cases
≥4 symptoms cases
Panic Disorder cases

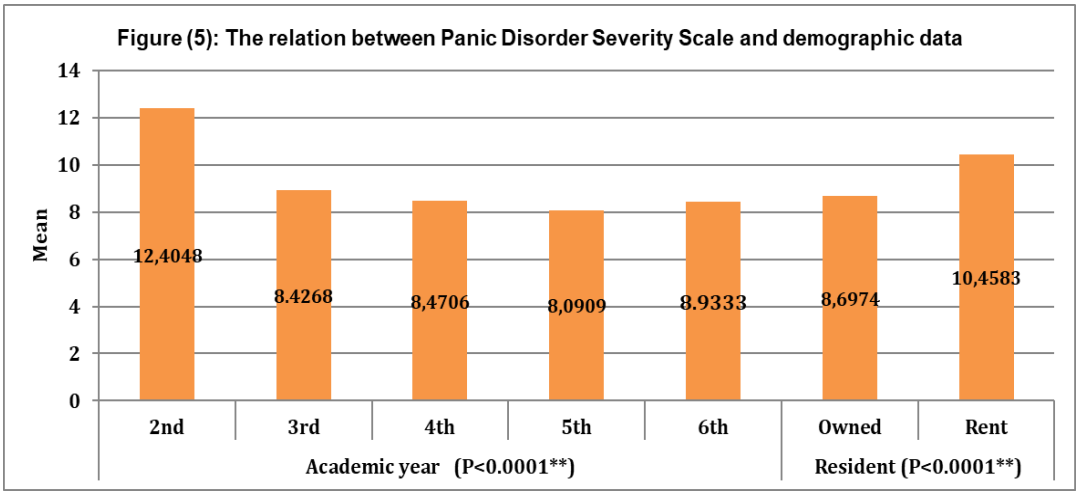


Figure (5): The relation between Panic Disorder Severity Scale and demographic data
14
12
10
8
6
4
2
0
Mean
12,4048
8.4268
8,4706
8,0909
8.9333
8,6974
10,4583
2nd
3rd
4th
5th
6th
Owned
Rent
Academic year (P<0.0001**)
Resident (P<0.0001**)

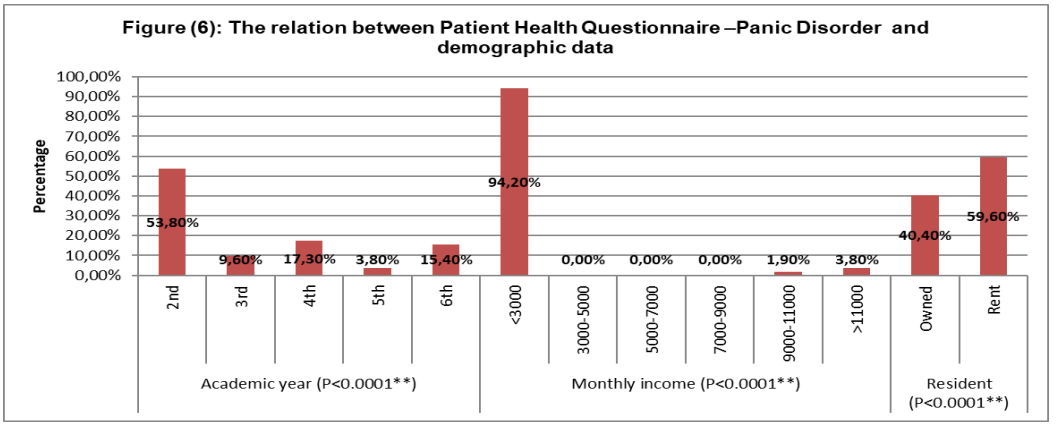


Figure (6): The relation between Patient Health Questionnaire –Panic Disorder and demographic data
100,00%
90,00%
80,00%
70,00%
60,00%
50,00%
40,00%
30,00%
20,00%
10,00%
0,00%
Percentage
53,80%
9,60%
17,30%
3,80%
15,40%
94,20%
0,00%
0,00%
0,00%
1,90%
3,80%
40,40%
59,60%
2nd
3rd
4th
5th
6th
<3000
3000-5000
5000-7000
7000-9000
9000-11000
>11000
Owned
Rent
Academic year (P<0.0001**)
Monthly income (P<0.0001**)
Resident (P<0.0001**)