

FREQUENCY OF ANXIETY AND ITS RELATION TO AGE & SOCIO-ECONOMIC STATUS AMONG MEDICAL STUDENTSDr. Zumer Abdul Khaliq^{*1}, Dr. Uzma², Dr. Amna Asad³¹(PMDC # 77891-P).²(PMDC # 77872-P).³(PMDC # 69308-P).***Corresponding Author: Dr. Zumer Abdul Khaliq**

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ABSTRACT

Introduction: Anxiety is defined as physical, behavioral, social and psychological response to treat self-concept characterized by subjective, consciously perceived feelings of tension. Nowadays anxiety is most commonly found among medical students. This study was conducted to find out the anxiety levels and ratio of severity of thirteen symptoms of anxiety. **Methods:** A questionnaire based study was conducted among 148 medical students which tests the level of anxiety and severity of symptoms of anxiety. The questionnaire used was Hamilton anxiety rating scale (HAM-A). **Results:** Out of 148 students, 66 (44.59%) students scored mild anxiety levels, 53 (35.81%) students scored moderate anxiety levels and 29 (19.60%) students scored severe anxiety levels. **Conclusions:** Mild form of anxiety is much more common among medical students and majority of these medical students are females. Moreover, the symptoms of anxiety including tension, anxious mood, depressed mood, insomnia, fear and CVS symptoms appear with moderate severity in majority of medical students while on the other hand some symptoms including general somatic muscular and sensory symptoms, difficulties in concentration and memory, genitourinary symptoms, respiratory symptoms, GIT symptoms and other autonomic symptoms appear with least severity among majority of medical students.

KEYWORDS: Anxiety, Psychological, Somatic, Autonomic, Anxious.**INTRODUCTION**

One of the most common and significant psychological problem faced now-a-days is anxiety.^[1] Anxiety is defined as physical, behavioral, social and psychological response to treat a self-concept characterized by subjective, consciously perceived feelings of tension.^[2] Anxiety is simply a response to prolonged and unpredictable threat that can affect cognition.^[3] Anxiety is a human emotion mainly consisting of variety of psychological and physical disturbances that appears only when a person judges an event as a severe threat to his ego and selfesteem.^[4] Average level of anxiety is very useful in keeping the people motivated and driven to achieve their goals while high level of anxiety is dangerous for mental and physical health and can interrupt academic performance.^[5] Nowadays anxiety is most commonly found among students therefore about 10 million students at schools and about 15 to 20% university students suffer from test anxiety.^[6] Anxiety was ranked first as presenting complain among the college students seeking counseling services.^[7] Researchers have been looking at the correlation between anxiety and academic performance for many years.^[8] First-year students are mostly at risk of suffering from

anxiety.^[9] Anxiety can directly affect the academic performance of a student. As the academic performance suffers, the anxiety level increases even more.¹⁰ Psychological morbidity among college students clearly shows the neglected public health problem.^[11] Anxiety is more common among females.^[12]

Symptoms of anxiety

Anxiety results in various physical symptoms. Most commonly these symptoms are.^[13]

- Anxious mood
- Tension
- Fear
- Insomnia
- Difficulties in concentration and memory
- Depressed mood
- General somatic muscular symptoms stiffness, soreness, neck ache etc.
- General somatic sensory symptoms tinnitus, blurring of vision etc.
- Cardiovascular symptoms like tachycardia, oppression, chest pain etc.
- Respiratory symptoms like throat constriction, dyspnea etc.

- Gastro-intestinal symptoms like nausea, vomiting, diarrhea, abdominal pain etc.
- Genitourinary symptoms like menstrual irregularities, anorgasmia, dyspareunia etc.
- Other autonomic symptoms like dryness of mouth, sweating, dizziness etc.

MATERIAL AND METHODOLOGY

Sampling Size

Present study is descriptive and cross-sectional research. Participants in this study are 3rd year MBBS students of Allama Iqbal Medical College, Pakistan. Total 148 undergraduate students from 3rd year participated in this research. They are 108 females and 40 males.

They were chosen according to random sampling and based on criterion that they had passed at least one college or university exam/test.

Instrument/material

To collect data i.e. assessment of anxiety level and presentation ratio of various symptoms, Hamilton anxiety rating scale (HAMA) questionnaire was used.¹⁴ The HAM-A scale is a 14-item test. Each item has 5 scales from 0-4, based on severity of symptom, to answer the question. It is used to measure the severity and occurrence ratio of anxiety symptoms.

A section of demographic questions and socioeconomic status was also added. This part including questions that identifies participants' age and gender.

Procedure/data analysis

After obtaining the informed consent, HAM-A questionnaire was explained to the students and data is collected by interviewing each participant individually. After the collection of data, the correlation between anxiety level and academic performance is found and the occurrence of severity ratio of symptoms of anxiety i.e. anxious mood, tension, fear, insomnia, difficulties in concentration and memory, depressed mood, general somatic symptoms (muscular and sensory), CVS symptoms, respiratory symptoms, gastro-intestinal symptoms, genitourinary symptoms and other autonomic symptoms were also found. These analysis procedures were done by SPSS 16.

Study Design

It is a Cross-sectional type of study.

Duration of study

This study was conducted in 3 months' time from May 27, 2017 to August 25, 2017.

Inclusion criteria

Only students of MBBS 3rd year of Allama Iqbal Medical College, were included.

Students of ages between 19 and 24 years were included.

Students had at least completed their first internal assessment

Exclusion criteria

- Students of BDS and other years were not included.
- Students age less than 19 and greater than 24 were not included.
- Any student taking anxiolytics or recreational drugs were excluded.
- Smoking and coffee addicts were not included.
- Students with any physical disability were not included.
- Previous supplementary holders were not included.

RESULTS AND FINDINGS

In our study 66 subjects (44.59%) scored mild anxiety levels, 53 subjects (35.81%) scored moderate anxiety levels and 29 subjects (19.60%) scored severe anxiety levels. This is clearly demonstrated in Table 1 and Chart 1. Among the subjects of mild anxiety levels there were 40 females (37.03%) and 27 males (67.50%). Among the subjects of moderate anxiety levels there were 42 females (38.88%) and 11 males (27.50%). Among the subjects of severe anxiety levels there were 26 females (24.07%) and 3 males (5.00%). This is demonstrated in Table 2 and Chart 2.

Table 1: Anxiety levels.

Anxiety levels	Frequency	Percentage
Mild	66	44.59
Moderate	53	35.81
Severe	29	19.60
Total	148	100.00

Table 2: Comparison of anxiety levels in males and females.

Gender	Anxiety levels	Frequency	Percentage
Males	Mild	27	67.5
	Moderate	11	27.5
	Severe	2	5
Females	Mild	40	37.03
	Moderate	42	38.88
	Severe	26	24.07
Total		148	100

Further the presentation ratio (i.e. which symptom presents with which severity) of thirteen symptoms of anxiety was also calculated. These thirteen symptoms are anxious mood, tension, fear, insomnia, difficulties in concentration and memory, depressed mood, general somatic muscular symptoms, general somatic sensory symptoms, cardiovascular symptoms, respiratory symptoms, gastro-intestinal symptoms, genitourinary symptoms and other autonomic symptoms. Students were interviewed for above mentioned 13 symptoms by using HAM-A scale and results were plotted in tabulated form. Each symptom has five possible presentations 0,1,2,3 and 4. For anxious mood five presentations are 0-

neither insecure nor irritable, 1-doubtful whether insecure or irritable, 2-unable to relax and wordiness about minor details, 3-insecurity and influence on daily work and 4-feeling of dread and influence on daily life.

The highest score (50.7% subjects) for this symptom was 2 (unable to relax and wordiness about minor details). This is demonstrated in Table 3 and Chart 3.

Table 3: Various levels of anxious mood and their presenting frequency.

Anxious Mood	Frequency	Percentage
0-Neither insecure nor irritable	12	8.1
1-Doubtful Whether insecure or irritable	17	11.4
2-Unable to relax and wordiness about minor matters	75	50.7
3-Insecurity and influence on daily work	42	28.4
4-Feeling of dread and influence on daily life	2	1.4
Total	148	100.0

Table 4: Various levels of tension and their presenting frequency.

Tension	Frequency	Percentage
0-No tension	12	8.1
1-Somewhat nervous and tense	46	31.0
2-Condition of unrest without influence on daily life	71	48
3-Nervousness with occasional interference with daily work	17	11.5
4-Constant state of restlessness	2	1.4
Total	148	100.0

Table 5: Various levels of Fear and their presenting frequency.

Fear	Frequency	Percentage
0-No fear	73	29
1-Doubtful about fear	17	11.4
2-Phobic anxiety but able to fight with it	73	49.3
3-Some extent of interference with daily work	14	9.5
4-Constant interference with daily life	1	0.7
Total	148	100.0

For Tension five presentations are 0-no tension, 1-somewhat nervous and tense, 2-condition of unrest without influence on daily life, 3-nervousness with occasional interference with daily work and 4-constant state of restlessness. The highest score (48.0% subjects) for this symptom was 2 (condition of unrest without influence on daily life). This is demonstrated in Table 4 and Chart 4.

For Fear five presentations are 0-no fear, 1-doubtful about fear, 2-phobic anxiety but able to fight with it, 3-some extent of interference with daily work and 4-constant interference with daily life. The highest score (49.3% subjects) for this symptom was 2 (phobic anxiety but able to fight with it). This is demonstrated in Table 5 and Chart 5. For Insomnia five presentations are 0-usual sleep duration and depth, 1-slightly reduced but no change in depth, 2-sleep depth is reduced and is more superficial and disturbed, 3-sleep depth and duration markedly changed and 4-sleep depth is shallow but no real sleep. The highest score (37.0% of subjects) for this symptom was 2 (sleep depth is reduced and is more superficial and disturbed). This is demonstrated in Table 6 and Chart 6.

For Difficulties in concentration and memory five presentations are 0-no difficulty in concentration and memory, 1-doubtful about difficulty in concentration and memory, 2-difficult to concentrate on daily routine, 3-pronounced difficulties with concentration and memory and 4-difficulty in decision making and memory. The highest score (33.1% subjects) for this symptom was 2 (difficult to concentrate on daily routine). This is demonstrated in Table 7 and Chart 7.

For Depressed mood five presentations are 0-not present, 1-doubtful about depressed mood, 2-unpleasant experiences but lacks helplessness, 3-nonverbal signs of depression and hopelessness and 4-hopelessness and nonverbal signs dominate. The highest score (38.5% subjects) for this symptom was 2 (unpleasant experiences but lacks helplessness). This is demonstrated in Table 8 and Chart 8.

For general somatic symptoms: Muscular five presentations are 0-no soreness or stiffness in muscles, 1-somewhat soreness or stiffness in muscles, 2-character of pain, 3-muscle pain interferes with daily work and 4-muscle pain is constant and interferes with daily life. The highest score (41.9% of subjects) for this symptom was 0

(no soreness or stiffness in muscles). This is demonstrated in Table 9 and Chart 9.

For Depressed mood five presentations are 0-not present, 1-doubtful about depressed mood, 2-unpleasant experiences but lacks helplessness, 3-nonverbal signs of depression and hopelessness and 4-hopelessness and nonverbal signs dominate. The highest score (38.5% subjects) for this symptom was 2 (unpleasant experiences but lacks helplessness). This is demonstrated in Table 8 and Chart 8.

For general somatic symptoms: Muscular five presentations are 0-no soreness or stiffness in muscles, 1-somewhat soreness or stiffness in muscles, 2-character

of pain, 3-muscle pain interferes with daily work and 4-muscle pain is constant and interferes with daily life. The highest score (41.9% of subjects) for this symptom was 0 (no soreness or stiffness in muscles). This is demonstrated in Table 9 and Chart 9.

For Gastro-intestinal symptoms five presentations are 0-not present, 1-doubtful about GIT symptoms, 2-GIT symptoms are present but patient can control them, 3-occasional difficulty in controlling GIT symptoms and 4-GIT symptoms are present at all the time and interference with daily life. The highest score (44.9% subjects) for this symptom was 2 (GIT symptoms are present but patient can control them). This is demonstrated in Table 13 and Chart 13.

Table 6: Various levels of Insomnia and their presenting frequency.

Insomnia	Frequency	Percentage
0-Usual sleep duration and depth	35	23.7
1-Slightly reduced but no change in depth	27	18.2
2-Sleep depth is reduced and is more superficial and disturbed	56	37.0
3-Sleep depth and duration markedly changed	27	18.2
4-Sleep depth is shallow but no real sleep	3	2
Total	148	100.0

Table 7 various levels of difficulties in concentration and Memory and their presenting frequency.

Difficulties in Concentration and Memory	Frequency	Percentage
0-No Difficulty in concentration and memory	48	32.4
1-Doubtful about difficulty in concentration and memory	37	25.0
2-Diffical to concentrate on daily routine	49	33.1
3-Pronounced difficulties with concentration and memory	12	8.1
4-Difficulty in decision making and memory	2	1.4
Total	148	100.0

Table 8: Various levels of depressed mood and their presenting frequency.

Depressed mood	Frequency	Percentage
0-Not Present	32	21.6
1-Doubtful about depressed mood	35	23.6
2-Unpleasnl experiences but lacks helplessness	57	38.5
3-No-verbal sings of depression and hopelessness	23	15.6
4-Helpessness and non-verbal signs dominate	1	0.7
Total	148	100.0

Table 9: Various levels of general somatic symptoms: muscular presenting frequency.

General somatic symptoms: muscular	Frequency	Percentage
0-No soreness in muscles	62	41.9
1-Somewhat soreness and stiffness in muscles	25	16.9
2-Character or pain	51	34.4
3-Muscle pain interferes with daily work	9	6.1
4- Muscle pain is constant and interferes with daily life	1	0.7
Total	148	100.0

Table 10: Various levels of General Somatic symptom: Sensory presenting frequency.

General somatic symptoms: muscular	Frequency	Percentage
0-Not present	88	59.5
1-Doubtful about sensory symptoms	30	20.3

2-Buzzing in ears visual disturbances and itching sensations in skin	18	12.1
3-Generalized sensory symptoms and interference with daily work	11	7.4
4- Generalized sensory symptoms are present at all the time and inference with daily	1	0.7
Total	148	100.0

Table 11: Various levels of cardiovascular symptom: Sensory presenting frequency.

CVS Symptoms	Frequency	Percentage
0-Not present	17	11.5
1-Doubtful about CVS symptoms	26	17.5
2-CVS symptoms are present but patient can control	92	62.2
3-Occasional difficulty in controlling CVS symptoms	12	8.1
4- CVS symptoms are present at all the time and inference with daily life	1	0.7
Total	148	100.0

Table 12: Various levels of Respiratory Symptoms and their presenting frequency.

Respiratory symptoms	Frequency	Percentage
0-Not present	93	62.8
1-Doubtful about respiratory symptoms	15	10.1
2-Respiratory symptoms are present but patient can control them	36	24.3
3-Occasional difficulty in controlling respiratory symptoms	4	2.8
4- Respiratory symptoms are present at all the time and inference with daily life	0	0
Total	148	100.0

Table 13: Various levels of gastro-intestinal symptoms and their presenting frequency.

Gastro-Intestinal Symptoms	Frequency	Percentage
0-Not present	43	29
1-Doubtful about GIT symptoms	15	10
2-GIT symptoms are present but patient can control them	66	44.9
3-Occasional difficulty in controlling GIT symptoms	22	14.8
4- GIT symptoms are present at all the time and inference with daily life	2	1.3
Total	148	100.0

Table 14: Socio-Economic Status.

Levels of Anxiety	Low frequency		Middle Frequency		High		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Mild anxiety	21	31.8	23	34.8	22	33.4	66	100
Moderate anxiety	2	3.8	47	88.7	4	7.5	53	100
Severe anxiety	20	69	1	3.4	8	27.6	29	100

As shown by Table 16 69% of people with low socioeconomic status suffered from severe anxiety and 88.7% of middle class people suffered from moderate anxiety but the people of high socio-economic status had 33.4% mild and 27.6 had severe anxiety.

As for age shown in Table 15 if we distribute by age 55.2% of 19-20yrs age group showed severe anxiety , 21-22yrs age group showed 26.2% moderate anxiety and 22-23yrs age group showed 48.5 % mild anxiety.

Table 15:

Levels of Anxiety	Various Age Groups							
	19-20 years		21-22 years		23-24 years		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Mild anxiety	19	28.8	15	22.7	32	48.5	66	100
Moderate anxiety	22	41.5	14	26.4	17	32.1	53	100
Severe anxiety	16	55.2	7	24.1	6	20.7	29	100

DISCUSSION

Anxiety is universal experience which has an important function in the face of danger.^[15] Anxiety can be taken as a reliable indicator for assessment of mental illness in the community.^[12] Results of this study indicate that the mild form of anxiety is much more common among medical students. This study also found difference between gender and anxiety.

On the basis of gender discrimination anxiety is common among females. Another study conducted by Liselotte N. et al. among US and Canadian Medical students also found that there is high prevalence of anxiety in females than their male counterparts.^[16] Female medical students mostly suffer from moderate form of anxiety while male medical students mainly suffer from mild form of anxiety. Therefore, it is estimated that anxiety will be the second most common cause of disability worldwide.^[17]

Further this study was conducted to find out the severity of thirteen symptoms of anxiety. These thirteen symptoms are anxious mood, tension, fear, insomnia, difficulties in concentration and memory, depressed mood, general somatic muscular symptoms, general somatic sensory symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, genitourinary symptoms and other autonomic symptoms.

The first symptom i.e. anxious mood appeared with moderate severity in the medical students suffering from anxiety. Majority of medical students about 50.7% felt that they were unable to relax during anxiety and there were also worried about minor matters. However, at the same time 28.4% medical students suffered from high degree of anxious mood. In such students, anxiety had an influence on daily work and they were insecure.

The second symptom i.e. tension generally appeared with moderate severity in about 48.0% medical students. Such students were in condition of unrest during anxiety but there was no influence on daily life. However, at the same time tension appeared with mild severity in about 31.9% medical students. They were somewhat nervous and tense during anxiety.

The third symptom i.e. fear appeared with moderate severity in about 49.3% medical students suffering from anxiety. They usually suffered from phobic anxiety but they were able to fight with it. At the same time 29.0% medical students said that there was no presence of fear in them during anxiety. Iqbal MA. et al conducted a similar study among Pakistani medical students and found marked presentation of anxious mood, tension, and fear among medical students suffering from anxiety and there was positive correlation with the frequency of these symptoms and severe anxiety.^[18]

The fourth symptom i.e. insomnia appeared with varying severity among medical students. About 37.0% medical students suffered from moderate insomnia. Their sleep

depth was reduced and sleep was more superficial and disturbed. In about 23.7% medical students there was no appearance of insomnia and their sleep had normal duration and depth. At the same time 18.2% students suffered from mild insomnia showing that their sleep was slightly reduced but no change in depth. Timothy A. Brown et al conducted a study on relationship between anxiety and insomnia in USA and found insomnia was consistent with severity of anxiety.^[19]

The fifth symptom i.e. difficulty in concentration and memory showed varying severity among medical students. About 33.1% medical students suffered from moderate difficulty in concentration and memory. Such students felt difficulty to concentrate on daily routine. However, at the same time about 32.4% students suffered from no difficulty in concentration and memory and 25.0% students were doubtful about difficulty in concentration and memory. Gerald M. conducted a research in UK students and found there was a deleterious effect of anxiety on memory, concentration and creative performance.^[20]

The sixth symptom i.e. depressed mood appeared with moderate severity in about 38.5% medical students. Such students had unpleasant experiences but lacked helplessness. About 23.6% students suffered from mild depressed mood. They were doubtful about depressed mood. At the same time in about 21.6% students depressed mood was not present during anxiety. A study in Saudi Arabia showed direct relation with anxiety and depressed mood as depressed mood was consistent in anxiety.^[21]

The seventh symptom was actually a group of general somatic muscular symptoms. Majority of students about 41.9% showed no appearance of general somatic muscular symptoms. Such students had no soreness or stiffness in muscles during anxiety. However, at the same time there was appearance of moderate general somatic muscular symptoms in about 34.4% students. Such students had a character of pain. The eighth symptom included the group of general somatic sensory symptoms. Majority of students suffering from anxiety about 59.5% manifested no appearance of general somatic sensory symptoms. However about 20.3% students were doubtful about general somatic sensory symptoms. Joormann and Stober conducted a similar study in Germany and concluded that anxiety has strong correlation with somatic muscular and sensory disturbances.^[22]

The ninth symptom included the group of cardiovascular symptoms. The cardiovascular symptoms appeared with moderate severity in majority of students about 62.2%. In such students CVS symptoms were present but they were able to control them. A study conducted in US by Roose SP. et al concluded the students suffering from severe anxiety have significantly higher rate of serious

adverse CVS symptoms such as palpitations tachycardia etc.^[23]

The tenth symptom was a group of respiratory symptoms. In majority of students about 62.9%, respiratory symptoms were not present. However, in about 24.3% respiratory symptoms were present but they were able to control them. A study conducted in Japan showed that anxiety is strongly associated with increasing respiratory rate because neural centers of anxiety and respiration are placed closed together.^[24]

The eleventh symptom was a group of gastro-intestinal symptoms. In about 44.9% students GIT symptoms were present but they were able to control them and in about 29.0% students GIT symptoms were not present at all. Fosse and Ledyard conducted a study on USA found the growing recognition link between anxiety and GI tract. They concluded that high prevalence of anxiety was strongly associated with functional GI symptoms.^[25]

The twelfth symptom included the group of genitourinary symptoms. In about 48.6% students genito-urinary symptoms were not present. However, in about 27.0% of students genitorurinary symptoms were present but they were able to control them and 17.6% students were doubtful about genito-urinary symptoms. Alfred A. and Donald R. conducted a study in USA and concluded that urinary symptoms such as frequency, urgency, burning, or retention are most common in women suffering from severe anxiety while in men functional urinary symptoms were relatively infrequent often they indicate problems of genital dysfunction like impotence, penile pain, testicular pain.^[26]

The thirteenth symptom was a group of other generalized autonomic symptoms. In majority of students about 56.1%, there was evidence of presence of one or more autonomic symptom but there was no interference with daily work. Work conducted by Timothy B. in USA demonstrated that there was a positive autonomic arousal among students suffering from severe anxiety.^[19]

There seems to be an inverse effect of socioeconomic status on anxiety levels majority of students from low and middle class suffer from severe anxiety. Nuran B. and Nazan B conducted a research in USA concluding that students emerging from a low socioeconomic class have a higher chance of suffering from severe anxiety.^[27]

As of age there seems to be decreasing trend of anxiety with age this should be evaluated by further research. A research conducted among US and Canadian Medical students revealed that there is an increasing trend of anxiety with age.^[16]

In this study, we have seen that mild to moderate anxiety is seen among medical students. This may be due to stress in present day life. The anxiety can be reduced by

eating balanced healthy diet and doing regular exercise.^[28,29]

CONCLUSION

It can easily be concluded from this study that mild form of anxiety is much more common among medical students and majority of these medical students are females. On gender differentiation males mostly suffer from mild anxiety level and females mostly suffer from moderate anxiety level. Moreover, the symptoms of anxiety including tension, anxious mood, depressed mood, insomnia, fear and CVS symptoms appear with moderate severity in majority of medical students while on the other hand some symptoms including general somatic muscular and sensory symptoms, difficulties in concentration and memory, genitourinary symptoms, respiratory symptoms, GIT symptoms and other autonomic symptoms appear with least severity among majority of medical students. It seems that students of low and middle class suffered more from anxiety and there seems to be an inverse relationship age with anxiety levels. This is recommended for further research.

RECOMMENDATIONS

Healthy life style should be adopted with plenty of physical activity and balanced diet.

Health seminars should be conducted to increase awareness in students.

Counselling and behavioral therapy should be available for medical students with a proper schedule and must ensure complete privacy.

Posters and brochures should be distributed often to remind people and increase consciousness about mental health issues in students.

Adequate informational care should be provided to the parents of students so that they may become more understanding and aware about their children's mental health.

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