

**Discussion**

The present study depicts that in contrast to positive emotions like love, joy, and excitement, anxiety is a feeling.There are three basic parts to anxiety emotions: affect, an urge to act, and physiological modifications.**(Lazarus et al., 2016).**In the study anxiety has a specific place. Additionally, anxiety has been a central theme in the majority of theories of abnormal psychology and personality**.(Freud et al.,2017)**As a stimulus, a reaction, a drive, a motive, and a trait, anxiety has been defined in a variety of inconsistent and contradictory ways.

According to research on the total global burden of disease, anxiety disorders are among the most common mental diseases and rank among the top disorders. Complex illnesses, anxiety disorders still have poorly known etiological pathways. Their aetiology is considered to entail a variety of elements, including psychological, genetic, biological, and chemical aspects.Despite the fact that the diagnosis of anxiety disorders is continually changing, diagnostic guides still depend on symptom lists rather than objective biomarkers, and the effectiveness of treatments is generally mild to moderate.**(Elke Humer et al.,2020).**

Anxiety disorders are a widespread worldwide health issue that have an impact on about 300 million people who suffer from a variety of anxiety disorders as well as society at large.The eventual emergence of other psychiatric comorbidities, such as depression, is also a result of anxiety disorders.**(Ceylan, M.F.et al.,2014).**Gender has an impact on the prevalence of anxiety disorders, with women having a higher prevalence than men.**(Jalnapurkar, I et al.,2018).**Despite a tendency towards reduced incidence in elderly adults (>80 years), rates of prevalence vary little by age.**(Byrne, G.J.et al.,2002).**Feelings of worry and fear, as well as associated behavioural problems including avoidance behaviour, are characteristics of the category of diseases known as anxiety disorders.Like all psychiatric disorders, anxiety disorders are determined by symptom lists rather than objective biomarkers, even though patients frequently have symptoms that are compatible with many diagnoses.**(Shadli, S.M. et al., 2020).**

Despite the fact that there are numerous well-established psychotherapy and drug-based treatments that, on average, work **(Olatunji, B.O. et al., 2010),** individual treatment reactions differ greatly.**(Loerinc, A.G et al., 2015).** Limiting the validity of the notion that all patients' anxiety is caused by a single biological disturbance. **(Kapur, S. et al., 2012).**As a result, disruptions are more likely to vary between people  necessitating the development of a wider variety of biomarkers to better understand the etiological mechanisms particular to each patient and develop more focused treatments.**(Schneider, R.L et al., 2015).**

By distributing five different questionnaires for the quantitative analysis of anxiety to a random general population from the Institute of Jinnah University for Women, different levels of anxiety indication were determined in this study. Through my research, I was able to obtain a variety of results. For instance, **Graph-01** demonstrates that, when the DASS-21 questionnaires were administered, the majority of students—51.25%—were in the category of normal anxiety, indicating that they can generally manage their anxiety. While some students fall into the mild anxiety category (27.5%) and some into the moderate anxiety category (20%), this shows that very few students had trouble coping with anxiety situations.Additionally, 1.25 percent of students fell into the category of extreme anxiety, indicating that there were still some children who experienced this illness. The majority of participants were able to manage their anxiety, according to the DASS-21 category of different ranges, while some subjects had mild to moderate anxiety and others had severe anxiety, necessitating the use of different managing therapy. The 0% result for highly anxious indicates that neither a female nor a subject experienced extremely high levels of anxiety throughout the DASS-21 Performa. The majority of students fell into the usual limits for anxiety, which suggests that the majority of girls were coping with their stress.

According to **Graph-02**, the majority of students (42.50% on average) who completed the anxiety self-rating scale surveys fell into the category of "minimal anxiety," indicating that they can generally manage their worry. While some students fall into the category of moderate anxiety at approximately 12.50%, and others fall into the category of high anxiety at about 10%, this shows that minor individuals had trouble coping with anxiety circumstances. While others fall into the Mild Anxiety (25%) and Extreme Anxiety (40%) categories. This anxiety self-rating scale category of various ranges shows that the majority of participants were able to manage their anxiety, while others fall in the mild to moderate range and some had high anxiety indication with needing a distinct managing counselling and anxiety coping therapies.

As seen in **Graph-03**, 40% of participants scored as possible SAD on the Liebowitz Social Anxiety Scale, whereas 0% of pupils scored as highly probable. While 47.50% of females who tested positive for SAD were unlikely, 12.50% of them tested positive for typical SAD, and 0% tested positive for highly probable. According to Graph 3, 12.50% of females have a very good understanding of their anxiety situation, and 40% have a firm grasp on how to manage their anxiety. Only a very small percentage, 2%, needed counselling and further psychological care related to their mental and physical activity.

**Graph-04** demonstrates that while looking at the PHQ-9 questionnaires, 0% of participants had severe anxiety and 15% of students had anxiety that was above Moderately severe. Women make up 22.50% of the category "none Minimal," 27.50% of the category "mild Anxiety," and 35% of the category "moderate Anxiety." The fourth graph shows how well a person can cope with their anxiety.

Examining the GAD-7 questionnaires reveals that 6.25 percent of respondents fall into the category of severe anxiety, and 17.50 percent of students fall into the category of moderately severe anxiety. While 30% of females are classified as having mild anxiety, 46.25% are classified as having considerable anxiety.According to **Graph-05,** many ladies engage in various activities, including as wellness orientation, thought-control practise, social comfort activities, and many others, in an effort to reduce or manage their anxiety.

In contrast to depressed patients without anxiety, individuals with comorbid anxiety had higher triglyceride levels, and there were negative relationships between anxiety and high-density lipoprotein (HDL) values.(**Wang, J. et al.,2016)**.In addition, individuals with anxiety disorders had increased blood triglycerides, very-low-density lipoprotein (VLDL) cholesterol, and free cholesterol compared to healthy controls, although esterified cholesterol showed the reverse pattern.**(Mishra, T.K et al.,1984).**Anxiety and lipid profiles (total cholesterol, HDL, VLDL, low-density lipoproteins (LDL), and triglycerides) were not shown to be correlated in a study of menopausal women.**(Chen, C.-C et al.,2006).**

IcResearch has connected anxiety problems to inflammation. Consequently, using leukotriene receptor antagonists or certain fatty acids might also support the preservation of the symptoms of anxiety.The production of eicosanoids, which may result in disturbances of the system of inflammatory mediators, is preceded by the synthesis of omega-3 fatty acids..**(McCarter, G.C. et al., 2017).**

The production of eicosanoids, which can cause disruptions in the system of inflammatory mediators, is preceded by the synthesis of omega-3 fatty acids.**(Dalleau, E. et al., 2016).**A recent study supports the idea that anxiety and systemic inflammation are related study, demonstrating a connection between elevated levels of the inflammation marker C-reactive protein (CRP),Suicide risk among people with anxiety disorders.**(Dalleau, E. et al., 2016).**

The development of anxiety disorders may be significantly influenced by membrane lipids and lipid oxidation, according to mounting data. The barrier and signalling functions of membranes are critically dependent on membrane lipids**.(Casares, D et al.,2019).**Brain lipids are crucial for transmitter transmission because abnormalities in neuronal proteins and peptide activities are thought to be a major contributing factor to anxiety disorders. It is believed that lipids necessary for membrane formation, such as phospholipids, glycerolipids, and sphingolipids, are implicated in the pathophysiology of anxiety disorders, particularly.**(Müller, C.P et al.,2015).**It is believed that the extremely dynamic lipid composition of neuronal membranes influences the assembly of signalling proteins, which in turn impacts neuronal signalling and function.**(Postila, P.A et al.,2020).**

High-sensitivity CRP and fibrinogen levels were found to be adversely correlated with anxiety in a different investigation with seemingly healthy women, while no correlation was found in men. As a result, connections between anxiety and micro-inflammation indicators also appear to vary by gender and age, which may also be a factor in the conflicting findings regarding the relationship between lipid metabolism and inflammation with anxiety symptoms. **(Toker, S. et al., 2005).**

Studies indicate that the pathogenesis of anxiety disorders may entail inflammation caused by excessive NOx generation. **(Gammoh, O.S. et al., 2016).**Studies also point to nitro-oxidative stress as a factor in anxiety disorders, which lowers lipid antioxidant defences and promotes lipid oxidation. More precisely, it was shown that those with general anxiety disorders had higher levels of superoxide dismutase, lipid hydroperoxides, nitric oxide metabolites (NOx), and uric acid than people without anxiety problems. Along with such alterations, HDL and paraoxonase-1 levels fell.**(Maes, M. et al.,2018).**It is hypothesised that the pathophysiology of anxiety disorders includes inflammation brought on by excessive NOx generation.**(Gammoh, O.S et al.,2016).**However, studies analysing salivary NOx in daily psychological stress in humans and anxiety observed only correlations between stress and anxiety, but not between salivary NOx **(Jin, Let al.,2013**)and anxiety, in contrast to studies focusing on NOx levels in acute stress models, which found associations between anxiety and NOx.**(Gammoh, O.S et al.,2016).**

Numerous human investigations have shown a probable connection between oxidative stress and lipid peroxidation, as neurochemical causes of anxiety disorders, including phobias. Compared to a control group, lipid peroxidation was higher in children with anxiety disorders, as seen by elevated blood levels of lipid hydroperoxide. So, it has been suggested that lipid hydroperoxide may serve as a biomarker for anxiety disorders.Ceylan, **(M.F et al.,2014).**

Oxidative stress is indicated by increased lipid hydroperoxide levels and decreased paraoxonase activity, an enzyme connected to HDL that protects lipids from oxidation.

(**Brites, F.et al., 2017)**lipid peroxidation and oxidative stress may have a role in the etiopathogenesis of generalised anxiety disorder (GAD), according to studies that have been conducted in people with GAD who do not also have any coexisting psychiatric disorders. So, it has been suggested that lipid hydroperoxide may serve as a biomarker for anxiety disorders.**(Bulut, M et al.,2013).**

The relationship between oxidative stress and anxiety has frequently been linked to dietary influences.Other elements, such as electromagnetic field radiation, vibration, and ringtone from mobile phones, which have been shown to cause oxidative stress and anxiety-like behaviour in rats, may also contribute to oxidative stress.**(Selek, S et al.,2019).**

One study linked dietary biomarkers to perinatal anxiety problems. An inverse relationship between serum DHA levels and anxiety disorders in the first trimester was found in associations between polyunsaturated fatty acids and anxiety disorders in early pregnancy. As total lipids significantly decline after delivery compared to pregnancy, correlations between cholesterol and anxiety in the postpartum period were also examined . Overall, throughout the postpartum period, there were only somewhat negative relationships between total cholesterol, HDL cholesterol, and anxiety symptoms. **(Grimes, S.B et al., 2018)**

Unfortunately, studies looking at the connection between anxiety and depression have a tendency to use either trait anxiety measures or state anxiety measures, but not both. Additionally, this research has a propensity towards using instruments that exclusively evaluate trait and state anxiety components. Uncertainty exists regarding the relationship between the presence of depressive symptoms and transient emotions of fear and worry (state anxiety), the likelihood of developing depressive symptoms (trait anxiety), or both.**(Auerbach, S. M.et al.,2018)**

Your behaviour can be affected by anxiety. You could avoid particular situations, feel unable to go to work, or withdraw from friends and family. Even while avoiding circumstances can provide you with momentary comfort, the anxiety usually returns the next time you encounter it. Avoiding it merely makes you feel more in danger and prevents you from ever knowing if your fears are justified.If you have a history of anxiety disorders in your family, you are more likely to suffer from them. That implies that your genes at least have an impact. Yet, no "anxiety gene" has been discovered. Therefore, just because your parent or another close family has one does not guarantee that you will as well.**([Smitha Bhandari](https://www.webmd.com/smitha-bhandari) et al.,2021).**

Anxiety disorders are the most prevalent mental health conditions. Although they are less visible than schizophrenia, depression, and bipolar disorder, they can be just as disabling. **(Bystritsky A et al., 2013).**Cognitive-behavioral therapies and psychopharmacological medications are both effective ways to treat anxiety problems. These interventions target various symptoms. **(Khalsa SS, et al., 2013).**Reduced productivity, higher morbidity and death rates, and a rise in alcohol and drug usage among a significant portion of the population can all be attributed to anxiety disorders. **(Cameron ME, Schiffman J. et al., 2013).**

Deakin and Graeff (23) proposed that 5-HT has a dual function in the modulation of various forms of anxiety.Since the DPAG is innervated by the DRN, 5-HT produced from DRN terminals is thought to attenuate unconditioned fear while increasing learning anxiety at the amygdala. They contended that a brain system that encourages complex defensive behaviours (in the amygdala) while limiting instinctive fight-or-flight responses (in the DPAG) would clearly be beneficial for survival.**(Graeff, F. G.et al..,1996)**

The selective serotonin reuptake inhibitors (SSRIs), which have a wider range of action than benzodiazepines, are genuinely beneficial in treating anxiety disorders.**(Handley, S. L. et al.,1995).**

Anxiety have  been linked to decreased serotonergic activity, and medicines either directly or indirectly boost the serotonin system's sustained function. The 5-HT1A autoreceptor, which serves as the main somatodendritic autoreceptor to negatively control the "gain" of the serotonin system, is an important part of the serotonin circuitry.**(Albert PR et al.,2014)**

Additionally, healthy people experience  anxiety after receiving systemic lipopolysaccharide injection, which stimulates the production of interleukin-1 (IL-1) and other inflammatory cytokines in the brain.**(Rossi S,et al., Sacchetti L,et al.,2012)**

Salivary Cortisone was proposed as a measure of state anxiety in addition to being a anxiety biomarker. Salivary alpha-amylase, a component that stimulates the sympathetic nervous system, was shown to be greater in people with higher dental anxiety scores, suggesting that it may be useful as a biomarker of dental anxiety. **(Petrakova, L. et al.,2017)**However, a study of children with and without temporomandibular problems found that those with the disease had greater levels of anxiety symptoms, but there was no difference in salivary alpha-amylase or salivary cortisol. However, it was shown that high levels of hair cortisol predicted the later emergence of worried behaviour in young monkeys in response to a significant life stressor, suggesting some promise as a biomarker for stress-related mental health issues.**(Jafari, A et al.,2018).**

Pituitary adenylate cyclase-activating polypeptide (PACAP), a neuropeptide that has been proposed as a biomarker for the severity of anxiety-related mental illnesses,**(Denis, V et al.,2019)** is thought to be involved in the anxiety response. Analysis of serum PACAP in male and female GAD patients and healthy controls showed no overall association between circulating PACAP and GAD, but a female-specific association, supporting earlier research suggesting possible sex differences in PACAP effects, probably as a result of estrogen-dependent regulation of this pathway.**(Ross, R.A. et al.,2020)**

An endogenous regulator of fear expression is thought to be the neurotrophin fibroblast growth factor-2 (FGF2), a protein involved in stress regulation and neurogeneration.**(Graham, B.M. et al.,2011).** As a result, FGF2 could possibly be a possible biomarker for anxiety disorders. However, further study is needed to fully understand how FGF2 might be used to identify sensitive people and develop preventative measures.**(Graham, B.M. et al.,2017).**

Pregnenolone sulphate, one of the previously thought of steroids as being neuroactive, is said to behave as a negative gamma-aminobutyric acid (GABA) receptor modulator, which may account for the decreased pregnenolone sulphate concentration in anxious and depressed males.**(Hill, M et al.,2015).**

Urine samples were subjected to metabolomics studies in addition to plasma analysis.

**Zheng et al**. profiled urine samples from healthy controls using several metabolomics techniques.and sufferers of illnesses like anxiety and sadness. Four biomarkers in total—N-methylnicotinamide,Hippuric acid, azelaic acid, and aminomalonic acid were found to be able to differentiate between healthy from those who are nervous or sad. The major roles of such indicators in three metabolic pathways (tryptophan–nicotinic acid metabolism, lipid metabolism, tyrosine phenylalanine routes) (tryptophan–nicotinic acid metabolism, lipid metabolism, tyrosine–phenylalanine pathways)as well as five cellular and molecular processes (cell cycle, metabolism of amino acids, molecular transport,cell division and development, as well as small molecule biology).**(Jung, Y.-H et al.,2018).**