

Aggression Caused by Anxiety in Smokers and Non-Smokers

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ABSTRACT

Abnormally high or low anxiety levels are examples of general emotional regulation disturbances that are prone to contributing to excessive aggression and violence. This shows that the neurochemical mechanisms and brain circuits controlling anxiety and aggression may overlap. While numerous studies have linked smoking cigarettes to an increase in anxiety symptoms or disorders, early exposures may predispose a person to having stronger anxiety reactions in the future. This study hypothesizes that smokers will exhibit higher levels of aggression compared to non-smokers (Hypothesis 1). Additionally, it is predicted that smokers will experience higher levels of anxiety relative to non-smokers (Hypothesis 2). Furthermore, it is anticipated that a significant positive correlation will be observed between aggression and anxiety in both smokers and non-smokers (Hypothesis 3). These hypotheses are formulated based on existing literature suggesting a potential link between smoking, anxiety, and aggression, and aim to investigate the relationship between these variables in both smoking and non-smoking populations. The results of the study indicate significant differences in anxiety levels between smokers and non-smokers, with smokers exhibiting higher levels of anxiety. Additionally, there was no significant difference in the levels of aggression between smokers and non-smokers. However, the correlation analysis revealed significant and positive associations between aggression and anxiety in both groups, supporting the initial hypotheses and suggesting a link between anxiety and aggression irrespective of smoking status.

Keywords: smokers, aggression, non-smokers, anxiety, smoking

CHAPTER 1: INTRODUCTION

1.1 Aggression

Aggression is a complicated behaviour that people display in a variety of settings and is impacted by many different things. It is essential to comprehend aggression in order to successfully control and lessen its detrimental effects. We shall define aggressiveness in this topic and examine the several forms of aggression that are frequently seen in both people and animals. Any behaviour or action that has the intention of hurting, intimidating, or dominating others can be roughly categorised as aggression. It entails the use of aggression, whether verbal or physical, to accomplish a goal. It's crucial to remember, though, that aggression is not always the same as hostility or violence. Subtle manifestations of it include verbal abuse and passive aggressiveness. (Buss, A. H., 1961)

Types of aggression (Berkowitz, L., 1993)

1. **Physical Aggression:** This kind of aggression uses force or violence on others with the intention of causing them hurt or pain. It can include more serious behaviours like punching or attacking someone,

as well as more moderate behaviours like pushing or slapping. Physical violence can be impulsive or planned, and it is frequently linked to emotional causes.

2. **Verbal Aggression:** Any hostile remark meant to denigrate, disparage, or insult another is considered verbal aggression. It covers actions such as yelling, cursing, calling names, or making menacing remarks. One can utilise verbal aggression to intimidate someone, show dominance, or vent displeasure.
3. **Relational Aggression:** The main goal of this kind of aggression is to sabotage social connections and cause indirect harm to others. It encompasses actions like distributing false information, barring people from social circles, or emotionally controlling other people. In social situations, relational aggressiveness is frequently seen, particularly in adults and adolescents.
4. **Reactive Aggression:** This type of hostility is impulsive and arises in response to a danger or provocation. It is frequently accompanied by an instantaneous, emotional response and is typified by a loss of self-control. Aggression of this kind is more likely to happen in reaction to threats to one's bodily or mental health, whether they are actual or imagined.
5. **Instrumental Aggression:** Instrumental aggressiveness is deliberate and planned, in contrast to reactive violence. It is motivated by the desire to accomplish a specific objective or result, such as gaining control, power, or money. In general, instrumental aggressiveness is less affected by emotional arousal and is more deliberate.
6. **Sexual Aggression:** Any non-consensual sexual act or behaviour done with the intention of controlling, harming, or overpowering another person is referred to as sexual aggression. It covers actions like rape, assault, and sexual harassment. Comprehending the elements that lead to sexual aggression is crucial for both victim care and prevention.

Causes

Biological Factors

Aggression develops and manifests in large part due to biological causes. Genetics is one of the main biological factors. According to studies, some genetic variants can make people more likely to be aggressive. For instance, violent behaviour has been connected to genes regulating neurotransmitters and serotonin receptors. Moreover, hormones have an impact on aggression. Specifically, testosterone has been linked to higher levels of violence. Those who act aggressively more frequently have been found to have higher testosterone levels. It's crucial to remember that aggression is a complicated behaviour that is influenced by a number of environmental, hormonal, and hereditary variables. (Davidson, Putnam, & Larson, 2000).

Environmental Factors

Environmental influences have a significant effect on how aggression develops and manifests. Exposure to violence is one of the most important environmental variables. Early exposure to or experience with violence can alter a person's view of appropriate behaviour, which can result in the development of violent tendencies. Furthermore, living in areas with high rates of poverty, social instability, or crime can influence how aggressive people behave. Aggression can also emerge in people as a result of other environmental circumstances, such as abusive or neglectful parenting. Aggressive tendencies may arise from inadequate emotional management abilities developed as a child in a setting marked by strict discipline, erratic love, or a lack of supportive role models. (Anderson & Bushman, 2002).

Cognitive Factors

Cognitive aspects pertain to an individual's thought process and perception of their environment. The manifestation

of violent behaviour can be attributed to specific cognitive processes. Hostile attribution bias is one cognitive component that affects violence. This bias is the propensity to see events that are neutral or unclear as purposefully threatening or harmful, which can result in aggressive reactions. Furthermore, people who struggle to regulate their emotions or have poor impulse control are more likely to act aggressively. When under stress or frustration, an inability to control one's emotions can cause impulsive and violent reactions. (Dodge & Pettit, 2003).

Social Factors

Social and environmental variables might also be the cause of aggressive behaviour. Anger is one of the many behaviours that are greatly influenced by peers. The likelihood of committing violent acts can rise if one is a member of a social group that encourages or upholds aggressive norms. Furthermore, marginalisation and societal injustices might fuel aggressiveness. Aggressive behaviour is a common way for those who feel oppressed or socially disadvantaged to defend themselves or demonstrate their power. (Bandura, 1973).

Strategies for managing aggression

- 1) Anger and Emotional Regulation (Linehan, 2014)
 - a) Identify triggers: Determine the particular circumstances or events that frequently lead to aggressive behaviour.
 - b) Develop self-awareness: Learn mindfulness practices to keep an eye on your emotional condition.
 - c) Create coping mechanisms: Use healthy techniques, such as deep breathing exercises, counting to ten, or taking pauses, to control and lessen anger.
- 2) Communication & Conflict Resolution (Gordon, 1970)
 - a) Active listening: Provide a chance for the aggressor to be heard and understood.
 - b) Empathy: Make an effort to comprehend the underlying causes of the aggressor's actions.
 - c) Problem-solving: Work together to identify win-win solutions to the problems that are producing aggression.
 - d) Assertiveness: Establish personal boundaries by politely and clearly expressing demands and concerns.
- 3) Environmental Management (Kondo, 2014)
 - a) Decrease Triggers: Make changes to the surroundings to lessen upsetting elements that encourage hostility.
 - b) Create a routine and structure: Maintaining consistency helps lessen aggression by fostering a sense of security and stability.
 - c) Set clear expectations and consequences: Boundaries that are both established and upheld deter hostility.
- 4) Reduction of Stress and Emotional Health (Cramer et al., 2016)
 - a) Promote self-care: Activities like exercise, recreational pursuits, or treatment that lower stress and improve emotional well-being should be encouraged.
 - b) Create relaxation skills: Show people how to control their tension and anxiety by practicing relaxation techniques like progressive muscle relaxation or meditation.

1.2 Anxiety

“Anxiety is a psychological state characterized by feelings of worry, nervousness, and apprehension, often accompanied by physical symptoms such as increased heart rate, muscle tension, and sweating. It is a normal reaction to stress or perceived threats, but when it becomes excessive or persistent, it can interfere with daily functioning and overall well-being.” American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.).

Causes

1. **Genetic Factors:** Research has indicated that anxiety problems are prone to run in families. People who have a family history of anxiety are more prone to experience anxious symptoms themselves. (Hettema et al., 2001).
2. **Brain Chemistry:** Anxiety may be exacerbated by imbalances in brain chemicals like dopamine and serotonin. These substances are in charge of controlling emotions and mood. (Craske et al., 2009).
3. **Environmental Factors:** Anxiety can be brought on by traumatic experiences like abuse, loss, or a significant life transition. Chronic stress brought on by problems in relationships, the workplace, or money can also play a role in the development of anxiety. (McLaughlin et al., 2010).
4. **Personality traits:** Being too sensitive or having a propensity to worry are two examples of features that can make anxiety more likely to develop. Anxiety disorders are also linked to control issues and perfectionism.

Symptoms

Anxiety can show up as psychological symptoms as well as physical ones. It's critical to identify these signs in order to get the support and assistance you need. Typical signs of anxiousness include the following:

1. **Physical Symptoms:** These can include sweating, dizziness, trembling, shortness of breath, rapid heartbeat, and gastrointestinal issues like nausea or stomachaches.
2. **Psychological Symptoms:** Anxiety can influence your feelings and thoughts, resulting in excessive concern, fear, restlessness, impatience, problems focusing, and difficulty falling asleep. Additionally, you might have panic attacks, which are abrupt, severe bouts of unease or terror.
3. **Behavioural Symptoms:** Anxiety can affect how you behave, leading you to avoid particular situations or activities, look for validation, or revert to old habits as a coping mechanism.

Types of anxiety disorder (American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing)

Anxiety disorders come in a variety of forms, each with its own features and symptoms. The severity of these conditions varies, and various treatment modalities can be needed. Typical forms of anxiety disorders include the following:

1. **Generalised Anxiety Disorder (GAD):** A wide range of commonplace circumstances can cause excessive and ongoing worry and anxiety. Anxiety can manifest physically in people with GAD, and they frequently struggle to manage their stress.
2. **Panic Disorder:** The hallmark of panic disorder is frequent, unplanned panic attacks, which are severe bouts of discomfort or terror. Physical symptoms including perspiration, shortness of breath, and a beating heart are frequently present during these episodes.
3. **Social Anxiety Disorder (SAD):** Also referred to as social phobia, SAD is characterised by a severe fear of social settings as well as a fear of humiliation or embarrassment in front of others. When it comes to social situations, people with SAD may avoid social situations and become quite anxious.
4. **Specific Phobias:** A persistent and overwhelming fear of a particular thing or circumstance characterises specific phobias. Common phobias include those related to flying, enclosed places, heights, and spiders.
5. **Obsessive-Compulsive Disorder (OCD):** OCD is typified by intrusive thoughts or obsessions that are followed by compulsions or actions that are ritualistic and repeated. These actions are frequently taken to reduce anxiety or stop perceived harm.

Techniques for managing stress

The optimal handling of anxiety necessitates a blend of professional intervention and self-help techniques,

contingent upon the intensity of symptoms and personal requirements. The following methods and approaches can assist people in controlling their anxiety:

- 1) Breathing Techniques
 - a) Diaphragmatic Breathing: By using the diaphragm to breathe slowly and deeply, you can help your body trigger a relaxation response that lessens the feelings of anxiety. Breathe deeply through your nose, letting your belly swell, and then gently release the breath through your mouth.
 - b) Box breathing: involves taking a big breath, holding it for four counts, exhaling for four counts, then holding it for four counts before taking another breath. This method relaxes the nervous system and aids in breathing regulation.
- 2) Mindfulness & Meditation
 - a) Mindfulness: Pay attention to the here and now without bias or attachment. Take up attentive exercises like eating, walking, or listening to help divert your focus from worrying thoughts.
 - b) Meditation: By teaching the mind to focus, encouraging relaxation, and raising self-awareness, regular meditation practice can lower anxiety.
- 3) Cognitive Behavioural Techniques
 - a) Cognitive restructuring: Question and reinterpret unfavourable ideas and viewpoints that fuel worry. Substitute them with uplifting and sensible ideas.
 - b) Exposure therapy: Over time, exposing oneself to anxiety-inducing circumstances gradually helps to lessen fear and avoidance.
- 4) Physical Activity and Relaxation
 - a) Frequent Exercise: Exercise lowers stress, anxiety, and depression and produces endorphins.
 - b) Progressive Muscle Relaxation: To relieve tension and promote relaxation, tense and relax various muscle groups throughout the body.
- 5) Lifestyle and Self-Care
 - a) Healthy Lifestyle: Eat a balanced diet, avoid smoking, and consume little alcohol or caffeine, and get adequate sleep.
 - b) Self-Care: Take part in relaxing and self-care activities, such reading, taking baths, listening to music, or pursuing hobbies.
- 6) Social Support
 - a) Seek Assistance: Communicate your thoughts and feelings to dependable family members, friends, or support networks. Make connections with people who can sympathise and who get it.
 - b) Professional Assistance: If you require direction, counselling, or medication, think about obtaining therapy from a mental health professional.

1.3 Smoking

Smoking is a practice involving the inhalation of smoke produced by burning tobacco, typically through the use of cigarettes, cigars, or pipes. The smoke contains numerous toxic chemicals, including nicotine, tar, and carbon monoxide, which are harmful to health and can lead to various diseases, including cancer, cardiovascular diseases, and respiratory disorders. (World Health Organization. 2019).

Consequences

1. Cardiovascular Effects: There is a serious risk to cardiovascular health with smoking. It causes toxic chemicals to build up in the circulation, which aids in the development of atherosclerosis. The hardening and narrowing of arteries brought on by plaque accumulation is known as atherosclerosis, and it limits the amount of oxygen

- and blood that can reach essential organs. As a result, there is an increased risk of peripheral artery disease, heart attacks, and strokes for smokers. Cigarette smoke contains a significant amount of nicotine, which worsens heart problems and increases blood pressure. (U.S. Department of Health and Human Services, 2020).
2. **Respiratory Effects:** The most significant harm caused by smoking is to the respiratory system. Smoking irritates and inflames the lungs by introducing a variety of toxic substances and pollutants. Chronic obstructive pulmonary disease (COPD), a progressive and incapacitating lung illness marked by diminished lung function, persistent coughing, and dyspnea, is a common ailment among long-term smokers. In addition, smoking impairs the lung's defence system, increasing the risk of respiratory infections including bronchitis and pneumonia in smokers. Furthermore, smokers have a markedly increased risk of lung cancer. (American Lung Association, n.d.).
 3. **Cancer Risks:** Lung cancer is the most commonly associated type of cancer with smoking as a primary cause. Tobacco smoke contains carcinogens that harm lung cells' DNA, causing aberrant cell proliferation and tumour formation that is uncontrollably aggressive. Smoking is associated with a higher risk of malignancies of the mouth, throat, oesophagus, pancreas, bladder, kidney, cervix, and stomach in addition to lung cancer. The chance of acquiring these cancers is greatly decreased by quitting smoking, underscoring the need of quitting. (Centers for Disease Control and Prevention, 2020).
 4. **Reproductive and Sexual Health Effects:** Smoking has detrimental impacts on sexual and reproductive health. In addition to having trouble getting pregnant, female smokers are more likely to miscarry, give birth prematurely, and experience pregnancy problems. Smoking during pregnancy has been linked to low birth weight and developmental problems in the foetus. Smoking has a detrimental effect on sperm quality in men, which lowers fertility and raises the risk of erectile dysfunction. Both male and female reproductive and sexual health can be negatively impacted by secondhand smoking exposure. (U.S. Department of Health and Human Services, 2014).
 5. **Other Health Effects:** Smoking affects many aspects of general health in addition to the systems outlined above. Smokers' immune systems are weakened, which increases their susceptibility to infections and slows healing. In addition to having a higher risk of cataracts, dental issues, and osteoporosis (thinning of the bones), smokers also have a higher risk of type 2 diabetes. Smoking also hastens the ageing process, which results in wrinkles, skin discolouration, and early ageing. (U.S. Department of Health and Human Services, 2014).

Strategies to quit

1. Understanding the characteristics of nicotine addiction is crucial before implementing any smoking cessation techniques. Tobacco products include nicotine, a highly addictive chemical that acts on the brain by releasing dopamine, which produces a good feeling. Addiction results from the brain's gradual dependence on nicotine. It takes willpower, tenacity, and the use of practical techniques to overcome a nicotine addiction.
 1. **Set a Quit Date:** Setting a date for your quit is a crucial first step in the process of stopping smoking. People commit to a time period and get themselves mentally ready for the voyage ahead by choosing a certain date. Selecting a day within the upcoming month is advised to give yourself enough time to mentally and emotionally prepare.
 2. **Identify Triggers and Create a Supportive Environment:** Recognising the triggers that lead to smoking will help you overcome your nicotine addiction. Triggers might range from social situations, boredom,

tension, and specific locations or activities. After identifying these triggers, people should remove or alter them to create a helpful environment. For instance, switching from smoking breaks to physical activity or taking up new interests in place of lighting up.

3. **Seek Professional Support and Support:** Getting help from a professional greatly improves your chances of success when trying to quit smoking, which can be difficult. Medical professionals can provide advice, write prescriptions for drugs, or suggest therapy that are suited to the particular requirements of each patient. Support from friends, family, or support groups can also offer accountability, understanding, and encouragement while you're trying to quit.
4. **Establish Coping Mechanisms:** Coping with stress, worry, or other emotional variables is a common aspect of nicotine addiction. It's critical to have alternate coping strategies if you want to successfully stop smoking. Healthy substitutes that can effectively replace the smoking habit include deep breathing exercises, meditation, physical activity, and creative pursuits.
5. **Use Nicotine Replacement treatment:** For people who have severe withdrawal symptoms, nicotine replacement treatment (NRT) is a helpful choice. Without the dangerous substances included in tobacco, NRT provides the body with controlled doses of nicotine. During the quitting process, products like nicotine patches, gum, inhalers, nasal sprays, or lozenges can help control withdrawal symptoms and reduce cravings.
6. **Make a Customised Quit Smoking Plan:** Creating a customised plan for quitting offers direction and structure. Setting short-term, attainable goals, keeping track of progress, monitoring triggers and coping techniques, and assessing what tactics are most effective for the individual are all possible components of a plan. Frequently evaluating and modifying the strategy in response to advancements and obstacles faced amplifies the likelihood of effectively ceasing smoking.
7. **Take Part in Behaviour Therapy:** This is a useful strategy for changing and substituting smoking-related behaviours. Cognitive-behavioral therapy (CBT) is one technique that can assist people in identifying and altering the harmful thought patterns connected to smoking. People can increase their chances of long-term success in quitting smoking by adopting better habits and attitudes towards smoking through the acquisition of new coping skills.
8. **Use Stress Management Techniques:** Relapses in smoking cessation attempts are frequently caused by stress. Smoking temptation can be reduced with the help of effective stress management practices. Regular exercise, yoga, mindfulness, and professional therapy are a few strategies that can greatly reduce stress and encourage quitting smoking.
9. **Remain Upbeat and Acknowledge Your Progress:** Giving up smoking is a journey, and it's important to keep an optimistic outlook at all times. No matter how tiny they may appear, acknowledge your accomplishments and treat yourself when you make progress. You can strengthen your resolve to stop smoking by surrounding yourself with encouraging people, positive affirmations, and enjoyable activities.
10. **Get Ready for Possible Relapses:** It's critical to recognise that quitting smoking may involve relapses. It's critical to see a relapse as a transient setback rather than a failure if it occurs. Regaining control can be facilitated by examining the circumstances that contributed to the relapse and reexamining previously effective tactics. The secret to long-term success in quitting smoking is maintaining commitment to the end aim.

1.4 CORRELATIONS

Correlation between anxiety and aggression

Aggression and anxiety have a complicated and multidimensional interaction that is frequently altered by several situational and individual circumstances. Although a straightforward linear association cannot be found between the two, research points to a number of potential relationships:

1. **Biological Factors** (Booij et al. 2007) **Neurotransmitter Systems:** Studies indicate that anxiety and aggressiveness problems may be influenced by dysregulation in neurotransmitter systems, such as those involving dopamine and serotonin. Specifically, serotonin is involved in mood regulation and impulse control; disruptions in its activity have been connected to anxiety and aggressive behaviours. **Hereditary Predisposition:** Research indicates that the emergence of anxiety and aggression may be influenced by hereditary variables. Heritability in both qualities has been shown in twin and family research studies, suggesting a possible genetic foundation for their co-occurrence.
2. **Psychological Factors** (McLaughlin et al. 2007) **Coping Mechanisms:** Aggressive behaviours are a common way for people who are anxious to deal with their discomfort. One can use aggression as a coping mechanism for feelings of vulnerability or to establish control over a situation. On the other hand, people who are more likely to be violent could feel anxious in circumstances where their sense of power or control is questioned. **Mental Functions:** Biases in cognition, like an over-sensitivity to danger or a misreading of social cues, can exacerbate anxiety and aggression. For instance, people who struggle with social anxiety could view unclear or neutral social encounters as dangerous, which could make them react defensively or aggressively.
3. **Environmental Factors** (Grant et al. 2003) **Stressors:** Aggression and anxiety can both be made worse by high-stress situations that are marked by elements like trauma, violence, or poverty. The body's stress response mechanisms can become dysregulated as a result of repeated exposure to stressors, making people more prone to aggressive and anxious behaviours. **Social Learning and Modelling:** One's own behavioural patterns can be influenced by witnessing and experiencing violent or anxiety-inducing behaviours in social settings. Aggression and anxiety can emerge as a result of various factors, such as seeing violence in the community or growing up in a home where aggressive behaviours are the norm.
4. **Individual Differences** (Grant et al. 2003) **Personality qualities:** Aggression and anxiety are linked to specific personality qualities, including neuroticism, impulsivity, and hostility. While those with low levels of anxiety may show more inhibited or avoidant responses, those with high levels of trait anxiety may be more reactive to stresses and prone to violent outbursts. **Emotional Regulation:** Aggression and anxiety may co-occur due to difficulties in managing emotions. For instance, people who find it difficult to control their anger or irritation may be more likely to react violently when prompted, whereas other people may internalise their discomfort and experience anxiety-like symptoms.
5. **Developmental Factors** (Breslau et al. 2009) **Childhood Experiences:** Aggression and anxiety can manifest differently later in life depending on developmental characteristics and early experiences. Children who are subjected to neglect, abuse, or inconsistent caring may exhibit maladaptive coping behaviours, such as withdrawal or violence, when faced with stresses. **Transitions in Development:** Depending on the developmental stage, aggression and anxiety may or may not be related. Adolescence, for example, is a time of increasing emotionality and social sensitivity. People may encounter more conflict and peer pressure at this time, which can lead to aggressive and nervous behaviours.

6. Cultural Factors (Markus & Kitayama 1991) Cultural Norms: The way that anger and anxiety are expressed and understood can be influenced by cultural values and norms. Certain types of aggressiveness may be more socially acceptable or even promoted in particular cultures under certain circumstances, such as self-defense or honour preservation. However, in societies that value emotional stoicism or independence, anxiety could be stigmatised or seen as a sign of weakness.
7. Community Resources and Social Support: Cultural variations in social support systems and community resource availability can affect people's capacity to manage stress and seek treatment for issues connected to aggression or anxiety. For mental health services to effectively meet the distinct needs and experiences of varied groups, cultural competence is a prerequisite.

Correlation between anxiety and smoking

It is often known that smoking and anxiety are related, yet their relationship isn't just a simple correlation because of a number of factors:

1. Self-Medication Hypothesis: Smoking is a common self-medication used by people with anxiety problems to reduce their symptoms. The euphoric effects of nicotine, the addictive ingredient in cigarettes, can momentarily lessen stress and anxiety. But usually only temporarily, this alleviation might result in a vicious cycle of smoking for anxiety relief. (Zvolensky & Bernstein, 2005).
2. Biological Factors: The association between anxiety and smoking is based on biological processes. Nicotine affects the brain's neurotransmitter systems, which control mood and stress reactions. These systems include dopamine, serotonin, and norepinephrine. These systems may alter as a result of prolonged nicotine exposure, which may play a role in the emergence and maintenance of anxiety disorders. (Picciotto & Kenny, 2013).
3. Psychological Factors: Coping mechanisms, self-control, and perceived stress are a few examples of psychological factors that affect smoking behaviours. Smoking may be seen as a coping strategy by anxious people to control pressures and unpleasant feelings. But smoking can also eventually make you feel more anxious, especially when you're going through a nicotine withdrawal. (Audrain-McGovern et al., 2009).
4. Environmental factors: Anxiety and smoking behaviours can be influenced by social and environmental variables, including exposure to smoking cues, cultural norms, and peer pressure. Anxious people may be more easily influenced by others, and they may turn to smoking as a coping mechanism or as a method to blend in with their peer groups where smoking is accepted. (Goodwin et al., 2009).
5. Genetic and family Factors: Research indicates that smoking and anxiety are more likely to occur together due to genetic and family factors. Genetic predispositions pertaining to stress response, neurotransmitter function, and addictive behaviours may heighten an individual's vulnerability to anxiety disorders and nicotine dependence. Furthermore, exposure to parental smoking behaviours and familial modelling can affect an individual's likelihood of initiating and maintaining a smoking habit. (Breslau et al., 2009).
6. Treatment Implications: For successful treatment outcomes, it's critical to address smoking and anxiety at the same time. Combined therapies that address anxiety and smoking cessation at the same time, such cognitive-behavioral therapy (CBT) for anxiety, have demonstrated potential in assisting people in lowering their smoking rates and controlling their anxiety symptoms. Additionally, for those with

co-occurring anxiety and smoking disorders, pharmaceutical treatments like certain antidepressants or nicotine replacement therapy may be helpful. (Morissette et al., 2007).

Correlation between aggression and smoking

Researchers have focused their attention on the relationship between smoking and aggression, and there are a number of reasons that contribute to this association:

1. **Self-Medication Hypothesis:** Smoking is a common self-medication used by people to deal with violent impulses or emotions of anger, much like anxiety. The addictive ingredient in cigarettes, nicotine, has mood-altering properties that can ease tension and agitation momentarily. Nevertheless, this alleviation is usually transitory and may result in an addiction to smoking as a coping mechanism for feelings of anger. (Kassel et al., 2003).
2. **Biological Factors:** Smoking and aggression are linked by biological mechanisms. Nicotine has an impact on the brain's neurotransmitter systems, which control mood, reward, and impulse control. These systems include dopamine, serotonin, and norepinephrine. Long-term nicotine use can change these processes, possibly making people more prone to aggression. (Bushman, 1997).
3. **Psychological elements:** Emotion regulation, stress, and frustration are a few examples of psychological elements that might have an impact on smoking behaviours. People who are frequently or severely angry or hostile may be more prone to smoke as a maladaptive coping mechanism to deal with these sensations. But smoking can also eventually make people more aggressive, especially when they're going through a nicotine withdrawal. (Kassel et al., 2003).
4. **Environmental Factors:** Aggression and smoking are related in part to social and environmental factors. Aggressive behaviours and the start or persistence of smoking can both be influenced by environmental pressures, violence, or conflict. Furthermore, smoking habits in those with violent tendencies may be shaped by peer pressure and societal smoking standards. (McKee et al., 2007).
5. **Genetic and Familial causes:** Aggression and smoking may co-occur due to genetic and familial causes. Genetic predispositions pertaining to impulse control, neurotransmitter function, and addictive behaviours may heighten an individual's vulnerability to nicotine dependency and violence. Individuals' tendencies of aggression and smoking initiation can also be influenced by familial modelling and exposure to parental smoking behaviours. (Breslau et al., 2008).
6. **Treatment Implications:** It's critical to treat smoking and aggression at the same time in order to enhance general wellbeing. Interventions including stress management, emotion control skills training, and smoking cessation programmes that address the root causes of both behaviours may be helpful. Both difficulties may benefit from pharmaceutical therapies such as some drugs used for aggressiveness management or smoking cessation, as well as cognitive-behavioral therapy (CBT). (Smith et al., 2014).

The complex interaction of psychological, biological, and environmental elements is reflected in the association found between smoking, anxiety, and aggression. Smoking is a common coping strategy used by those with high levels of anxiety or anger to ease their discomfort or control their emotions. The addictive ingredient in cigarettes, nicotine, momentarily eases tension and anxiety, giving people who are going through intense emotional states a way to self-medicate. Similar to this, those who have an inclination towards aggression could smoke to reduce their agitation or rein in their urges. But this respite is sometimes fleeting, and smoking can set off a vicious cycle of reliance on smoking to control emotions, eventually making anxiety and aggression worse. The co-occurrence of these behaviours can be further

influenced by environmental stressors, such as exposure to violence or social conflict, which can mould smoking behaviours in people who are aggressive or anxious. In addition, a person may be predisposed to violent behaviours and nicotine dependence due to genetic and familial causes. In order to promote healthier outcomes and address the complex relationship between anxiety, aggression, and smoking, comprehensive interventions that address the underlying factors contributing to these behaviours are necessary. Examples of these interventions include stress management, emotion regulation skills training, and smoking cessation programmes.

CHAPTER 2: REVIEW OF LITERATURE

Shepherd, J. M., Bakhshaie, J., et.al. (2022). In this study, Spanish-speaking Latinx smokers' anxiety sensitivity was investigated as a potential explanatory factor for the association between anxiety symptoms and smoking expectancies. 363 Spanish-speaking Latinx daily smokers (with a mean age of 33.3 years and a standard deviation of 9.81) were among the participants. The findings showed that anxiety sensitivity, a measure of anxiety symptoms, significantly influenced both positive and negative smoking expectations. These results imply that anxiety sensitivity is important to comprehending Latinx smokers' anxiety-smoking expectancies relationship.

Melamed, O. C., Walsh, S. D., (2021). The current study set out to investigate the link between smoking activity and anxiety and depressive symptoms in a group of young adult backpackers who visited places where smoking is socially acceptable. In this study, 199 young adults (52% men, mean age 24.27, SD = 1.05 years at time 1) were examined using a quasi-experimental design before, during, and after at least six months of backpacking. According to our research, young adults who are exposed to social circumstances that support smoking—like backpacking—are more likely to smoke. On the other hand, increases in smoking related to worsened mood symptoms rather than the observed rise in smoking behaviour.

Andrews, L. A., Brothers, S. L., et.al. (2019). By examining this relationship particularly with social anxiety in the literature on children and adolescents, this review expands on earlier research. The review is structured according to the different forms (physical and relational) and functions (reactive and proactive) of aggressive behaviour because of how complicated it may be. Results from sixteen studies that were found to be relevant point to connections between relational and reactive forms of aggressiveness and social anxiety. There also seem to be correlations, albeit weaker ones, with physical violence. All things considered, while the results point to possible links between social anxiety and violence, the paucity of pertinent research and the inconsistent results regarding gender erode trust in the conclusions.

Chung, J. E., Song, G., et.al. (2019). The aim of this study was to look at the connection between teenage aggression and anxiety proneness. A total of 79.5% of the 2432 students who took part in the survey—completed the questionnaire—were among the participants. 163 (8.4%) participants were assigned to the anxiety group based on RCMAS. Higher anxiety levels were substantially correlated with aggressive behaviour. Specifically, out of the four subdomains of aggressiveness, hostility and anger were more strongly correlated with anxiety than verbal and physical aggression. Anxiety was found to be independently correlated with aggressiveness score, gender, age, headache, constipation, and asthma, according to multivariate analysis. Teens who scored 69 or more on the total aggression scale were 9 times (AOR = 9.00, CI = 6.33–13.51) more likely to experience anxiety than teens who scored less than 69.

Malanchini, M., Smith-Woolley, E., et.al. (2019). This study offers a thorough analysis of the relationship between MSDP and one harmonised externalising component, violent conduct, as assessed during

childhood and adolescence. Aggression in childhood and adolescence was predicted by MSDP. The independent effect of MSDP was found to be 0.4% ($r = 0.066$) in a meta-analysis spanning the four samples; this result held true when analyses were broken down by sex. The linkage between MSDP and aggression was not explained by aggressive parenting techniques or father smoking, which is consistent with the theory that there is a weak direct relationship between MSDP and aggression. Only a small percentage of the variation in aggression during childhood and adolescence can be attributed to perinatal variables, such as MSDP. It's possible that later events have a bigger influence on how aggressively teenagers behave.

Yan, Y., Sun, S., et al. (2019). The purpose of this study is to examine and clarify the relationship between anxiety and the stages of smoking in adolescent and young adulthood. Electronic databases had information on the relationship between anxiety and smoking among teenagers and young adults between the ages of 14 and 25. A systematic review process was applied to 19 out of 668 publications. Variations in definition concerning smoking phases limited the consistency of the nineteen reports under analysis. Compared to regular or daily smokers who are not nicotine dependent (non-ND), anxiety seems to be a more constant risk factor for ND smokers. Non-ND smokers who smoke out of anxiety are more likely to develop a nicotine addiction. The conflicting results can be attributed to a lack of agreement on the definition of smoking stages.

Zvolensky, M. J., Bakhshaie, J., et al. (2019). This study looked at the relationship between anxiety sensitivity (fear of anxiety and associated feelings), cigarette dependency, perceived barriers to quitting, and the intensity of difficulties encountered during the quitting process in a large sample of Latinx smokers. Anxiety sensitivity is a promising transdiagnostic factor. 367 Spanish-speaking Latinx daily smokers (59.1% female, mean age = 33.20 years, standard deviation = 11.81) were the participants. As predicted, anxiety sensitivity was found to be strongly correlated with the degree of cigarette dependency, the perception of barriers to quitting, and difficulties encountered during the quitting process. Examining the lower-order aspects of anxiety sensitivity revealed that while cognitive concerns were linked to higher perceived barriers to quitting and the severity of issues encountered during previous attempts to quit, physical concerns were strongly correlated with cigarette dependency.

Svicher, A., Zvolensky, M. J., & Cosci, F. (2018). The lower-order aspects of AS (Physical, Cognitive, and Social concerns) were assessed in the current cross-sectional study in connection to current withdrawal symptoms from nicotine, the short-term effects of quitting smoking, and cigarette dependency. A total of 331 adult Italian smokers were selected from the general population and asked to complete questionnaires that measured their dependence on cigarettes, symptoms of nicotine withdrawal, and AS. The psychological symptoms of nicotine abstinence were linked to all ASI-3 subscales ($\beta = 0.30-0.10$; $p \leq 0.001$). On the other hand, the physical symptoms of nicotine abstinence were linked to ASI-3 physical worries ($\beta = 0.62$; $p \leq 0.001$) and ASI-3 cognitive concerns ($\beta = 0.25$; $p \leq 0.001$). There existed no correlation between short-term smoking abstinence expectancies and any ASI-3 subscale. Cigarette dependency was linked to ASI-3 physical concerns ($\beta = 0.72$; $p \geq 0.001$) and ASI-3 cognitive concerns ($\beta = 0.25$; $p \geq 0.001$).

Matuszka, B., Bácskai, E., et al. (2017). This study looked into the relationships between alcohol and tobacco usage separately and together, as well as between these substances and physical violence in this community. A typical school sample of teenagers aged 14 to 16 ($N = 944$) with a mean age of 15.03 years was employed. The previous month's rates of drinking and smoking were 41.4% and 29.6%, respectively. Twenty-seven percent of people used joints. In comparison to single substance users or non-users, joint

substance users exhibited considerably greater levels of enhanced physical aggression, which was additively associated with drinking and smoking. Our research highlights the possible significance of these medications' combined use in the emergence of violent behaviours during this transitional phase.

Watson, N. L., Heffner, J. L., et.al. (2017). According to research, smokers who are socially nervous tend to smoke more in order to escape internal smoking cues and have higher degrees of smoking-specific experience avoidance. Which specific kinds of internal smoking cues they avoid are unclear, though. In order to fill this vacuum in the literature, this study was conducted. Adult smokers who were enrolled in a group-based smoking cessation trial numbered 450. Lower levels of acceptance of thoughts, feelings, and sensations that trigger smoking were linked to social anxiety. Even after accounting for levels of posttraumatic stress disorder, depression, generalised anxiety, and nicotine dependence, social anxiety was still able to explain some of the distinctive variability in the acceptance of both physical and emotional cues associated with smoking as well as the overall variability in the acceptance of internal smoking cues. The distinct diversity in acceptance of concepts that initiate smoking was no longer explained by social anxiety. Smokers who experience significant social anxiety are less receptive to internal cues related to smoking. This impact was true for both emotional and physical cues, regardless of the degree of dependence or co-occurring mental health conditions.

Fluharty, M., Taylor, A. E., (2016). We conducted a comprehensive review assessing the relationship between smoking and anxiety and/or depression in long-term research. The following categories were used to group the results of 148 studies: smoking trajectory, smoking heaviness, smoking onset, smoking status, and tobacco dependence. Each category showed a wide range of outcomes, including null findings and evidence for both positive relationships (smoking to later mental health and mental health to later smoking). Almost half of the studies found evidence linking baseline depression or anxiety to some form of later smoking behaviour, and over a third found evidence linking smoking exposure to later depression or anxiety.

Powers, M. B., Davis, M. L., et.al. (2016). Poor smoking cessation outcomes are linked to anxiety sensitivity (AS). One explanation could be that smokers with high AS smoke in a different way from regular smokers, which strengthens their addiction. Therefore, we looked at the connection between AS and smoking variability in a population of smokers who were considering treatment. The participants (N=136; 52.2% female; Mage=44.19 y, SD=11.29) were recruited as part of a larger randomised controlled experiment for smoking cessation and had increased AS. They were daily smokers. The majority of participants were Caucasian (73%), well-educated (73%), single (73%), and worked full-time (56%). They smoked seventeen cigarettes a day on average. As anticipated, both a regression analysis using baseline evaluations and a longitudinal study using multilevel modelling revealed that, after adjusting for sex, age, and other factors, higher AS was linked to more fluctuation in the number of cigarettes smoked each day.

Leventhal, A. M., & Zvolensky, M. J. (2015). An innovative approach for comprehending emotion-smoking comorbidity is presented in this study. Our hypothesis is that smoking is associated with a variety of anxiety and depressive psychopathologies due to transdiagnostic emotional vulnerabilities, which are fundamental biobehavioral features that represent maladaptive responses to emotional situations and underlie different forms of emotional psychopathology. Using this paradigm, the empirical research on the three transdiagnostic emotional vulnerabilities—anhedonia (diminished pleasure), anxiety sensitivity, and distress tolerance—that are linked to smoking is reviewed and synthesised. As a whole, Anh, AS, and DT are thought to: (a) support a variety of emotional psychopathologies; (b) enhance the perceived and

real affect-enhancing effects of smoking as well as other mechanisms underlying smoking; (c) encourage progression along the smoking trajectory (i.e., initiation, escalation/progression, maintenance, cessation/relapse); and (d) be promising targets for smoking intervention.

Pawlina, M. M. C., Rondina, R. D. C., et.al. (2015). Throughout the course of smoking cessation treatment, assess changes in the patient's levels of stress, motivation, anxiety, and sadness. Anxiety, depression, motivation, and stress levels improved between E1 and E2, as well as between E1 and E3, among the 142 patients who were assessed. Furthermore, throughout the trial period, there was a strong correlation between treatment success and anxiety and motivation levels, but only between E2 and E3 and depression levels. We come to the conclusion that during the course of smoking cessation treatment, there are, in fact, changes in the patient's levels of stress, anxiety, depression, and motivation. Patients who responded well to the treatment seem to have more noticeable alterations.

Granic, I. (2014). In this article, a novel theoretical model for comorbid anxious and aggressive youngsters is outlined, along with three hypotheses: (a) Unpredictable parenting causes anxiety in kids, which in turn makes them act aggressively; (b) protracted anxiety weakens kids' ability to control impulses and set off aggressive episodes, and aggression in turn controls anxiety levels; and (c) little everyday stressors cause anxiety while cognitive perseverance keeps anxious moods stable, making kids more prone to act aggressively. These theories have not received much, if any, direct research testing. This review examines current evidence and theory that supports these assertions, and it offers recommendations for future studies that can put them to the test. The theories' most pertinent therapeutic implications are explored, and it is suggested that treating anxiety may be the main goal of treatment in order to increase the effectiveness of interventions for childhood aggressiveness.

Kiryanova, V., & Dyck, R. H. (2014). In order to further define the long-term behavioural consequences of modifying 5-HT during development, we looked at how adult male mice's conduct was affected by perinatal Flx exposure. From embryonic day 15 to postnatal day 12, dams received treatment with roughly 25 mg/kg/day of Flx, and the behaviour of the adult offspring was evaluated. It has been observed that exposure to Flx during pregnancy results in heightened aggression, enhanced spatial memory, and decreased anxiety-like behaviours. Gross motor function, sensory processing, or memory impairments were not brought on by this exposure.

Olvera, H., Bakhshaie, J., et.al. (2014). Anxiety disorders and smoking often co-occur. One of the main signs of anxiety disorders is trait worry. Although studies indicate that concern processes might have a significant role in some smoking behaviours, the mechanisms underlying these relationships are still unclear. Among treatment-seeking daily smokers (N = 376; 47% female; Mage = 37.76, SD = 13.46), the current study looked at anxiety sensitivity (AS) as a potential mediator for the relationship between trait worry and the number of years being a daily smoker, latency to first cigarette of the day, smoking rate, heaviness of smoking, and nicotine dependence. As expected, AS was found to be a substantial mediator of the relationships between trait worry and the smoking variables under investigation. The current research indicates that in order to address smoking behaviour in worry-prone, treatment-seeking daily smokers, it may be helpful to clinically address AS.

Taylor, A. E., Fluharty, M. E., et.al (2014). Using a Mendelian randomization technique, ascertain whether links between smoking and anxiety and depression are likely to be causative. Participants aged 16 years or older who are European-ancestry smokers, smokers in the past, and never smokers, from 25 studies in the Consortium for Causal Analysis Research in Tobacco and Alcohol (CARTA). Up to 58,176 never smokers, 37,428 past smokers, and 32,028 present smokers (total N=127,632) were included in the

analytical sample. Current smokers had 1.85 times higher odds of depression, 1.71 times higher odds of anxiety, and 1.69 times higher odds of psychological distress than never smokers in observational analyses. In addition, compared to never smokers, former smokers had higher probabilities of psychological discomfort, anxiety, and sadness. There was proof that heavy smoking was positively correlated with psychological disorders as anxiety and depression.

Yochum, C., Doherty-Lyon, S., et.al. (2014). This study aims to understand that smoking during pregnancy is linked to a number of detrimental outcomes for the foetus. Recent epidemiological research has called into doubt the causality of the link between maternal smoking and neurobehavioral impairments. To ascertain the impact of prenatal cigarette smoke (CS) exposure on neurobehavioral development, we employed an animal model of maternal smoking. Methylphenidate therapy significantly reduced the considerable increase in locomotor activity shown by male, but not by female, offspring of mothers exposed to CS during adolescence and maturity. Male progeny also shown higher levels of aggression, as demonstrated by lower attack latency and attack frequency in a resident-intruder challenge. Along with these behavioural impairments, there was a considerable drop in brain-derived neurotrophic factor (BDNF) mRNA and protein as well as striatal and cortical dopamine and serotonin.

Zaidi, U. (2014). The purpose of the study was to look into how male adult students' anger and impulsivity related to smoking. It was predicted that the qualities of aggression and impulsivity would differ significantly between smokers and non-smokers. Two hundred adult male students were chosen for the sample from various universities in Islamabad. The personality traits of aggression and impulsivity were measured using two subscales: impulsiveness and aggression. To analyse the data, descriptive statistics and the t-test were computed. The findings indicated that smokers and non-smokers differ significantly in terms of impulsivity and violence.

Huijbregts, S. C., Séguin, J. R., et.al. (2008). In a population sample of infants born in Québec (N = 1,745), the combined effects of maternal prenatal smoking and parental history of antisocial behaviour on physical aggressiveness between ages 17 and 42 months were examined in this study. In the prediction of children's probability to display high and escalating physical aggressiveness, an analysis of variance (ANOVA) revealed substantial main effects of maternal prenatal smoking and a significant interaction between maternal prenatal smoking and mother's history of antisocial behaviour. The interaction showed that when a woman had a significant history of antisocial behaviour, the effects of heavy smoking (≥ 10 cigarettes/day) during pregnancy were more pronounced.

Marsee, M. A., Weems, C. F., & Taylor, L. K. (2008). In a community sample of youth from a variety of ethnic backgrounds, we looked at the relationships between aggressive dimensions and symptoms of anxiety disorders (N = 83; 46% female). Our study's findings supported the hypothesis that reactive relational aggressiveness and anxiety are related. Furthermore, it was discovered that gender moderated the link, with males exhibiting higher levels of reactive relational violence than both girls and males with low anxiety. We also discovered that the relationship between reactive relational aggressiveness and anxiety was mediated by negatively framed cognitive errors based on social interactions. The findings are analysed in terms of elucidating the disparities in aggressiveness across genders, treatment implications, and the necessity of longitudinal research to define the temporal relationships between anxiety and aggression.

Kiive, E., Eensoo, D., et.al. (2002). In this study it was seen that since few things are known about the relationship between platelet MAO and behaviour in children, despite the fact that adult personality traits and behavioural preferences are known to be correlated with platelet MAO activity. Platelet MAO activity

was assessed using a radioenzymatic technique using β -phenylethylamine as the substrate in 1129 randomly selected 9 and 15-year-old children. In comparison to non-smokers, smokers had significantly lower levels of MAO activity as well as significantly higher ratings in the areas of aggression, motor restlessness, and concentration difficulties. There were strong correlations between platelet MAO activity and behavioural assessments in children aged 15 but not in 9 years. It is argued that, taking smoking into account as a confounding factor, longitudinal studies are the only way to uncover the causal association between behavioural variables and platelet MAO.

File, S. E., Fluck, E., et.al. (2001). We looked at how nicotine affected the mood swings that occurred after a reasonably difficult activity, as well as how well male and female nonsmoking students performed cognitively. Age and IQ were matched, and there was no difference in the groups' weekly or daily alcohol or coffee usage, nor pre-test scores on measures of anxiety, sadness, extroversion, and neuroticism. In tests of attention and memory, nicotine had no effect on performance. Anxiety, dissatisfaction, and aggression scores were markedly elevated after mild stress exposure. Nicotine prevented these mood swings in females but increased them in males. This implies that young women may begin smoking regularly as a way to self-medicate when under stress, which suggests that efforts to prevent and help women quit smoking would be more effective if they addressed concerns of stress and anxiety, which may be core factors underlying initiation and maintenance of regular smoking.

Schechter, M. D., & Rand, M. J. (1974). In this paper during two sessions, the aggression scores and visual reaction times of smokers and non-smokers were measured using the Buss aggression machine. When compared to their smoking session, the mean aggression scores of the non-smokers did not differ significantly between sessions, but the aggression scores of the chronic smokers increased significantly during their non-smoking (deprivation) session. This increase in aggression in deprived smokers is positively correlated with rated hostility scores on the Buss-Durkee Hostility Inventory and is discussed as a factor in the continuation of the smoking habit.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Aim

The aim of this research is to understand the relationship between aggression and anxiety in smokers and non-smokers

3.2 Objective

1. To study the association between aggression and anxiety
2. To understand the intensity of anxiety in smokers and non-smokers

3.3 Hypothesis

3. The level of aggression is high in smokers than non-smokers
4. The level of anxiety is high in smokers than non-smokers
5. There is a correlation between aggression and anxiety in smokers and non-smokers

3.4 Research Design

Quantitative research design

Quantitative research is “a method of research that relies on measuring variables using a numerical system, analyzing these measurements using any of a variety of statistical models, and reporting relationships and associations among the studied variables. For example, these variables may be test scores or measurements of reaction time. The goal of gathering this quantitative data is to understand, describe, and predict the

nature of a phenomenon, particularly through the development of models and theories. Quantitative research techniques include experiments and surveys” defined by APA.

3.5 Variables

In an experiment, an independent variable is one that is controlled or watched to see how it affects the dependent, or outcome, variable. Independent variables might be causally connected to the dependent variable or not. The dependent variable is the result that can be seen to exist or change based on what happens or how the independent variable changes. In correlational research, the effect that you want to predict or explain is the "dependent variable". Dependent variables and the independent variable may or may not be causally linked also known as a response variable, effect variable, or criteria variable.

Following is the case for the current study:

Independent Variable: Smoking

Dependent Variable: Aggression and Anxiety

3.6 Sample

The study included 102 participants, 67 smokers and 35 non-smokers between 18-30 years of age.

3.7 Research Tools

The study will use an online questionnaire consisting of the following measures:

- Hamilton Anxiety Rating Scale (HAM-A) (Max R Hamilton 1959) - The scale consists of 14 items designed to assess the severity of a patient's anxiety. Each of the 14 items contains a number of symptoms, and each group of symptoms is rated on a scale of zero to four, with four being the most severe. All of these scores are used to compute an overarching score that indicates a person's anxiety severity. The Hamilton Anxiety Rating scale has been considered a valuable scale for many years, but the ever-changing definition of anxiety, new technology, and new research has had an effect on the scale's perceived usefulness. As a result, there have been changes, and challenges, to the original version of the scale over time.
- Buss–Perry Aggression Questionnaire (BPAQ) (Arnold H. Buss and Mark Perry 1992) - The AQ was first administered in 1992. It consists of 29 items on which respondents' rate statements on a 5-point scale ranging from "extremely uncharacteristic of me" to "extremely characteristic of me." On a normalised scale of 0 to 1, 1 representing the maximum level of violence, the scores are calculated. Anger, hostility, verbal aggression, and physical aggressiveness are the four variables it assesses. 34 items covering five factors—physical aggressiveness, verbal aggression, rage, hostility, and indirect aggression—make up the 2000 version of the AQ. Similar to the 1992 version, it employs a 5-point Likert scale; however, the response scale descriptions have been modified to read "not at all like me" and "completely like me."

3.8 Procedure

Questionnaires that satisfied the criteria were selected in order to measure the variables, (BPAQ, HAM-A). The same's legitimacy and dependability were taken into consideration. Additionally, a Google Forms survey was created with three parts for the corresponding questionnaires. Before filling out the questionnaire, the participants were asked for their permission. The subjects were given access to the survey. Using the snowball sampling technique, data was gathered. Following the collection of data, scoring was completed using the scoring keys that were included in the questionnaires.

3.9 Data Analysis

The data was analysed using excel and SPSS 23.0. The t scores were calculated using Microsoft excel of HAM A in smokers and non-smokers and correlation between the two variables was computed using the

scores collected from the HAM-A and BPAQ to determine the correlation between anxiety and aggression in smokers and non-smokers.

3.10 Ethical Consideration

The study will obtain ethical approval from the institutional review board (IRB). Informed consent will be obtained from each participant prior to their participation in the study

CHAPTER 4: RESULTS

Table 1: t-Test: Two-Sample Assuming Unequal Variances (HAM-A)

	<i>HAM A(S)</i>	<i>HAM A(NS)</i>	
Mean	15.92537	9.11428571	
Variance	82.16101	56.9865546	
Observations	67	35	
Hypothesized Mean Difference	0		
df	81		
t Stat	4.031379		
P(T<=t) one-tail	6.23E-05		
t Critical one-tail	2.37327		
P(T<=t) two-tail	0.000125		
t Critical two-tail	2.637897		

Table 1: Represents the difference between anxiety levels in smokers and non – smokers. This table shows that the level of anxiety is significantly higher than the level of anxiety in non-smokers as the t Stat value is greater than the t Critical value.

Table 2: t-Test: Two-Sample Assuming Unequal Variances (BPAQ)

	<i>BPAQ(S)</i>	<i>BPAQ(NS)</i>	
Mean	78.80597	69.85714	
Variance	181.3709	307.0672	
Observations	67	35	
Hypothesized Mean Difference	0		
df	55		
t Stat	2.641119		
P(T<=t) one-tail	0.005368		
t Critical one-tail	2.396081		
P(T<=t) two-tail	0.010736		
t Critical two-tail	2.668216		

Table 2: Represents the difference between aggression in smokers and non – smokers. This table shows that the difference between aggression levels in smokers and non-smokers is not much as the value of t Stat is not really greater than value of t Critical.

Table 3: Pearson’s Correlation for smokers

Descriptive Statistics			
	Mean	Std. Deviation	N
anxiety	15.9254	9.06427	67
aggression	78.8060	13.46740	67

Correlations			
		anxiety	aggression
anxiety	Pearson Correlation	1	.391**
	Sig. (2-tailed)		.001
	N	67	67
aggression	Pearson Correlation	.391**	1
	Sig. (2-tailed)	.001	
	N	67	67

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3: Represents the descriptive statistics of the study sample. It also presents Pearson’s correlation between the study variables. The association of aggression and anxiety in smokers was significant and positive ($p < 0.01$).

Table 4: Pearson’s Correlation for non-smokers

Descriptive Statistics			
	Mean	Std. Deviation	N
anxiety	9.1143	7.54894	35
aggression	69.8571	17.52333	35

Correlations			
		anxiety	aggression
anxiety	Pearson Correlation	1	.481**
	Sig. (2-tailed)		.003
	N	35	35
aggression	Pearson Correlation	.481**	1
	Sig. (2-tailed)	.003	
	N	35	35

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4: Represents the descriptive statistics of the study sample. It also presents Pearson’s correlation between the study variables. The association of aggression and anxiety in non-smokers was significant and positive ($p < 0.01$).

CHAPTER 5: DISCUSSION

The aim of this study was to understand the relationship between aggression and anxiety in smokers and non-smokers. To fulfil this aim there were two objectives:

First was to study the association between aggression and anxiety, and the second was to understand the intensity of anxiety in smokers and non-smokers.

These objectives guided the research process and provided a framework for exploring the relationships between these variables. Based on the existing literature and the objectives, corresponding hypotheses were formulated:

The first hypothesis stated that the level of aggression is high in smokers than non-smokers.

The second hypothesis proposed that the level of anxiety is high in smokers than non-smokers.

And the third hypothesis said that there is a correlation between aggression and anxiety in smokers and non-smokers.

For the study, a sample of 102 college students was gathered in order to investigate these links. Calculations of descriptive statistics were made for the mean aggression and anxiety scores. An overview of the study participants and the general characteristics of the population under consideration are provided by the sample characteristics.

The t test revealed significant difference in the levels of anxiety in smokers and non-smokers while it was also seen that there is no significant difference in the level of aggression in smokers and non-smokers. The correlation analysis also revealed significant and positive associations between aggression and anxiety in both smokers and non-smokers. These findings supported the initial hypotheses, indicating that smokers have higher levels of anxiety and aggression and that there is a significant and positive correlation between the two variables in smokers and non-smokers.

These findings are consistent with previous research indicating a relationship between smoking and increased anxiety levels. Smoking has been proposed as a form of self-medication for individuals experiencing anxiety, as nicotine, the addictive component of cigarettes, can provide temporary relief from anxiety symptoms (Picciotto & Kenny, 2013). However, this relief is often short-lived and may contribute to a cycle of dependence on smoking to manage anxiety (Zvolensky & Bernstein, 2005).

On the other hand, the lack of significant difference in aggression levels between smokers and non-smokers suggests that while smoking may be associated with increased anxiety, it may not necessarily lead to higher levels of aggression. This finding is in line with the complex nature of the relationship between smoking, anxiety, and aggression, which can be influenced by various factors such as individual differences, environmental factors, and coping mechanisms (Audrain-McGovern et al., 2009).

The significant and positive correlation between aggression and anxiety in both smokers and non-smokers highlights the interconnectedness of these two variables. Individuals experiencing high levels of anxiety may be more prone to aggressive behaviors as a means of coping with their distress or asserting control over their environment (McLaughlin et al., 2007). Similarly, aggressive tendencies may contribute to heightened feelings of anxiety, particularly in situations where individuals perceive a threat to their sense of control or safety (Anderson & Bushman, 2002).

It is important to consider the implications of these findings for understanding aggression caused by anxiety in both smokers and non-smokers. While smoking may serve as a coping mechanism for individuals experiencing anxiety, it is essential to address underlying psychological factors contributing to both anxiety and aggression. Interventions aimed at managing anxiety and aggression should take into account individual differences, environmental influences, and the potential impact of smoking on these behaviors.

Overall, these results underscore the complex interplay between smoking, anxiety, and aggression and highlight the need for comprehensive approaches to addressing these issues in both clinical and public

health settings.

CHAPTER 6: CONCLUSION

In conclusion, the results of this study provide valuable insights into the relationship between smoking, anxiety, and aggression. The findings revealed a significant difference in anxiety levels between smokers and non-smokers, with smokers exhibiting higher levels of anxiety. However, there was no significant difference in aggression levels between the two groups. Despite this, the correlation analysis demonstrated significant and positive associations between aggression and anxiety in both smokers and non-smokers. It is evident from this study that smoking may serve as a coping mechanism for individuals experiencing anxiety, but it may not necessarily lead to higher levels of aggression. However, both smokers and non-smokers experiencing high levels of anxiety may be more prone to aggressive behaviors, highlighting the need for comprehensive approaches to addressing mental health issues and promoting healthier coping strategies.

Overall, these findings contribute to our understanding of the complex relationship between smoking, anxiety, and aggression, emphasizing the importance of considering individual differences, environmental influences, and coping mechanisms in interventions aimed at promoting mental well-being.

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APPENDIX

Appendix 1

Hamilton Anxiety Rating Scale (HAM-A)

Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol* 1959; 32:50–55.

Below is a list of phrases that describe certain feeling that people have. Rate the patients by finding the answer which best describes the extent to which he/she has these conditions. Select one of the five responses for each of the fourteen questions.

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, etc.

Appendix 2

Buss-Perry Aggression Questionnaire (BPAQ)

Buss, A. H. & Perry, M. P. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, 63, 452-459.

Rate each of the following items in terms of how characteristic they are of you. Use the following scale:

1	2	3	4	5
Extremely uncharacteristic of me				Extremely characteristic of me

Aggression Factor I

- _____ 1. Once in a while, I can't control the urge to strike another person.
- _____ 2. Given enough provocation, I may hit another person.
- _____ 3. If someone hits me, I hot back.
- _____ 4. I get into fights a little more than the average person.
- _____ 5. If I have to resort to violence to protect my rights, I will.
- _____ 6. There are people who pushed me so far that we came to blows.
- _____ 7. I can think of no good reason for ever hitting a person.*
- _____ 8. I have threatened people I know.
- _____ 9. I have become so mad that I have broken things.
- _____ Total (*Reverse rating 1 = 5, 2 = 4, 3 = 3. 4 = 2, 5 = 1)

Aggression Factor II

- _____ 1. I tell my friends openly when I disagree with them.
- _____ 2. I often find myself disagreeing with people.
- _____ 3. When people annoy me, I may tell them what I think of them.
- _____ 4. I can't help getting into arguments when people disagree with me.
- _____ 5. My friends say that I'm somewhat argumentative.
- _____ Total

Aggression Factor III

- _____ 1. I flare up quickly but get over it quickly.
- _____ 2. When frustrated, I let my irritation show.
- _____ 3. I sometimes feel like a powder keg ready to explode.
- _____ 4. I am an even-tempered person.*
- _____ 5. Some of my friends think I'm a hothead.
- _____ 6. Sometimes I fly off the handle for no good reason.
- _____ 7. I have trouble controlling my temper.
- _____ Total (*Reverse rating 1 = 5, 2 = 4, 3 = 3. 4 = 2, 5 = 1)

Aggression Factor IV

- _____ 1. I am sometimes eaten up with jealousy.
- _____ 2. At times I feel I have gotten a raw deal out of life.
- _____ 3. Other people always seem to get the breaks.
- _____ 4. I wonder why sometimes I feel so bitter about things.
- _____ 5. I know that "friends" talk about me behind my back.
- _____ 6. I am suspicious of overly friendly strangers.

_____ 7. I sometimes feel that people are laughing at me behind my back.

_____ 8. When people are especially nice, I wonder what they want.

_____ Total