

ANXIETY IN THE GENERAL POPULATION VS. ATHLETES: DIFFERENTIAL CAUSES
AND TREATMENTS

by

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Submitted to Texas State University
in partial fulfillment
of the requirements for
graduation in the Honors College
December 2023

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ABSTRACT

Anxiety is the intense, excessive, and persistent worry and fear about everyday situations and is often accompanied by fast heart rate, sweating, and feelings of tiredness. Everyone will experience anxiety sometime in their life, some people more than others. In today's world, one important group of people that tends to suffer from anxiety is athletes. People tend to idolize them and put pressure on them to perform their absolute best. But at what cost? This research compares causes of anxiety in the general population versus athletes. Research shows that most anxiety in the general population is caused by things like **sleep deprivation, being over-caffeinated, or sitting down for too long**. On the other hand, athletes' anxiety mainly stems from fear of failure, public scrutiny, impractical expectations, and so much more. This research also addresses the most commonly used techniques for treating anxiety in athletes versus the general public. Although some of these techniques can work for both – such as **breathing techniques, positive self-talk, and muscle relaxation** – there are treatments that are more specific for the primary causes of anxiety in athletes. Furthermore, this work explores the differences in causes of anxiety in individual versus team sport athletes and considers whether the treatment techniques differ. Lastly, to understand how this relates to athletes today, a case study is proposed, and a treatment plan is developed that works best for this athlete.

Introduction to Anxiety

Paulo Coelho is quoted as stating, “Anxiety was born in the very same moment as mankind. And since we will never be able to master it, we will have to learn to live with it – just as we have learned to live with storms.” Anxiety is one of the most common mental health disorders in the world, but less than half of those who experience it seek help. According to the American Psychological Association, we can define anxiety as an emotion that is characterized by feelings of worried thoughts, high tension, and even physical changes such as increased blood pressure (Anxiety, 2008). Everyone experiences anxiety, whether it be of lesser or greater degrees, but when it is extreme and persistent, anxiety can become debilitating. Symptoms like panic, rapid breathing, and nausea can occur which can negatively impact the way one lives their life (Elflein, 2023). There are many different causes of anxiety for the many different people in the world. People in the general population can experience anxiety because of their job or relationship or from physical states like hunger and sleep deprivation (Vora, 2022). Anxiety disorders in the general population also “have a high comorbidity rate with other psychopathologies, such as major depression, eating disorders, substance abuse and drug addiction” (Schaal, et al., 2011).

On the other hand, even people that we look up to and idolize can suffer from anxiety, especially athletes. They must “fulfill high expectations and be physically and mentally prepared to achieve peak performance” (Sánchez, et al., 2023). Young athletes, college athletes, and even professional athletes can all experience psychological symptoms such as decreased self-confidence and difficulty concentrating, as well as physical symptoms like irritability and loss of appetite (Champigny, 2020). Consequently, these symptoms can be detrimental to their mental health and their performance. This anxiety can be triggered by an array of reasons, such as fear

of failure, public scrutiny, or impractical expectations. “Pressure to deliver a ‘perfect’ performance” and the fear of judgement can also impact an athlete’s mental health and performance (Schaal, et al., 2011). It is crucial to be able to find comfort when one is experiencing anxiety, but many people do not try to find help whether it be because they are unsure where to go or because they fear judgement (Ward, 2023). Treatment for anxiety is necessary to protect one’s mental health and to live a less stressful life.

For the general population, treatment for anxiety can look like practicing diverting intrusive thoughts or deep breathing techniques (Berghuis, 2004). While athletes can also use these techniques, they can use more specific techniques like muscle relaxation, focusing on the good, and gaining competitive experience (Koronas, et al., 2023). The method of imagery has become quite popular and can also be used, where the athlete “programs [their] mind to react optimally” and “reconstruct an experience mentally” (Coelho, et al., 2012).

Furthermore, causes and treatment of anxiety can also differ in athletes in a team sport versus an individual sport. These athletes can feel pressure from different sources: teammates and coaches for team sports and judges and other competitors for individual sports. Additionally, they can require different treatments, so this could look like reflective journaling for team sport athletes and meditation for individual sport athletes (Van Slingerland, et al., 2022) (Vu & Conant-Norville, 2021). Reflective journaling can be an easy outlet for an athlete to express their feelings but keep them private, and meditation can be easy to perform before competitions to clear one’s mind.

For any athlete, “the relevance of psychological functioning to [their] performance is reflected both in sporting outcomes and in the athlete’s well-being and mood” (Sánchez, et al., 2023). In other words, sports require an immense amount of effort and involvement physically,

emotionally, and mentally. This leads to anxiety and can further have a negative effect on performance on the field and in their everyday lives. In sum, anxiety is normal and can affect anyone, especially athletes. It is critical to seek help with anxiety because, over time, it can negatively affect one's mental and physical health.

There are many unique aspects to keep in mind when treating anxiety and considerations must be made for different people. A case study will be used to illustrate the issue of anxiety in a specific athlete and treatments that work best for this unique individual. Justin is a 22-year-old football player who has been experiencing anxiety recently. He is dissatisfied with his own perceived success in his life, and he is not in a committed relationship, but he wants to be. Justin plays college football, but he is not sure if he will be able to make it to the professional level. He says he feels anxious all the time, but especially when he thinks about his future on and off the field. A treatment plan will be constructed based on Justin's dissatisfaction with his success and his uneasiness about the future. But first, it is important to really get to know Justin on a deeper level because every athlete is different and may need a different approach.

Causes of anxiety in the general population

When comparing fear and anxiety, we can think of fear as an emotional response to a real threat that dissipates as soon as the threat is gone. On the other hand, anxiety is the worry of a possible threat in the future that lingers, and that threat may not ever happen. When most people say they feel anxious about a thought or situation, they usually mean they are nervous or apprehensive, but in reality, feeling of anxiousness can cause "physical and emotional symptoms that disrupt their lives" (Small & Vorgan, 2019). Every person's anxiety is different and can be caused or triggered by different factors. There is no single cause, but past experiences and genetic predispositions can play a role in the development of anxiety. These factors will have an

impact on our “brain chemistry, personality style, and tolerance for stress” which can ultimately dictate how severe one’s anxiety symptoms are, from being mild to being diagnosed as a full-blown disorder.

Genetically, if one’s parent or parents have suffered from anxiety, then they will have a 30 to 40 percent chance of also having anxiety. Furthermore, we not only look at DNA, but also one’s parents’ behaviors will have an impact on how we respond to stressful or fearful situations. If one’s parents showed healthy responses to stress and taught them coping strategies for anxiety, then they should also adopt those habits (Small & Vorgan, 2019). As children, we tend to imitate the behaviors and actions of those who we spend the most time around, which is usually our parents. Therefore, if one has strict and high-strung parents, or authoritarian parents, it can be difficult for their children to get out of that world of aggressiveness and anxiousness.

When it comes to personality, a person who is “rigid, volatile, pessimistic, or insecure will likely have greater difficulty with anxiety than [a person who is] resilient, optimistic, and self-confident” (Small & Vorgan, 2019). In other words, it can actually destroy our mental health and self-esteem to be in a negative mood all the time. If someone has the personality trait of being rigid it means that they are firm and have a fixed set of beliefs that are hard to change, and then volatile people are unpredictable and change rapidly. Pessimistic people always look at the bad in a situation, or look at the glass as half empty, and insecure people lack confidence in themselves.

It would be easy to predetermine that people with these personality traits would be more likely to have anxiety compared to people who are the opposite. Those who are resilient are able to withstand difficult conditions, and they will have a higher tolerance to stress because of their flexible outlook in situations. Optimistic people look for the good in situations or look at the

glass as half full. And finally, self-confident people are sure of themselves which is why these people may not develop anxiety or may develop it at a lower level.

The most common sources of anxiety for people in the general population are work or school stress, interpersonal relationship stress, and financial pressure (Small & Vorgan, 2019). It does not matter what kind of job a person has; it will always come with some kind of stress. It could be, trying to balance work and life, meeting deadlines, or conflicting with co-workers or bosses. Jobs can cause financial pressure and the constant pressure to make more money which can lead to burnout and one not enjoying their job anymore.

Similarly, whether it be high school or college, school is also an anxiety inducing environment. Taking exams, lack of sleep, a busy schedule can all cause students' brains to become overwhelmed and anxious. Finally, money is a major part of our lives and how we live, but acquiring and securing that money can also come at a high cost. Worrying about one's finances can cause sleep disturbances, low self-esteem, and low energy levels which can all ultimately lead to anxiety (Robinson).

More recently, technology has been a big factor in causing stress and anxiety (Small & Vorgan, 2019). Advances in technology have definitely created easier ways to communicate and stay informed, but "receiving a constant flow of information can serve to continually remind of us things that make us anxious" (Small & Vorgan, 2019). Social media especially has become a dominant presence in our lives that can contribute to a pressure to share our lives and experiences with others. The reason that this can make many people anxious is because seeing other people post about living their best lives while we are at home on the couch can make us feel jealous or boring. We can feel "an unrelenting form of peer pressure – a need to be better, happier, richer, and more successful than the others on our friends list" (Small & Vorgan, 2019).

Ultimately, constantly comparing ourselves to others is not mentally healthy and can cause anxiety.

When most people think of anxiety, they may think about it as a mental health issue resulting from a chemical imbalance in one's body. Clinicians and therapists offer medication and therapy to help with anxiety symptoms, but sometimes these options do not work. This is because it is not always just what is in one's head but can be coming from the physical body as well. Avoidable anxiety is "our body getting tripped into a stress response, which transmits a signal to the brain telling [one] something is not right" (Vora, 2022). In other words, the source of our anxiety can be caused by physical stress to the body.

This could look like hunger, so our body is not getting the sufficient amount of nutrients it needs, therefore our brain cannot function correctly (Vora, 2022). Another avoidable anxiety could be sleep deprivation or being over-caffeinated. Sleep is so important for our body and brain to rest and reset for a new day, so when we are not getting enough sleep and pumping our body with caffeine to stay awake, it can become dangerous to one's mental health (Vora, 2022). Long stretches of being sedentary, or sitting, can also be a cause of anxiety because one's body is not receiving any endorphins or feel-good hormones that come with moving our body (Vora, 2022). Knowing that there are physical, avoidable stressors in a person's life can allow them to become more familiar with ways to recognize when their body is trying to tell them something. One can address these signs by "having a snack..., or heading outside for a five-minute walk," and just making sure they get a good night's sleep (Vora, 2022).

Cortisol is a stress hormone that is a normal response when a person is worried or stressed. But it becomes abnormal and unhealthy when it is released continually for people who experience chronic stress or extreme worry for an extended period of time (Small & Vorgan,

2019). High cortisol levels can cause many of the symptoms we feel when experiencing anxiety. A person can have difficulty swallowing, sweating, and high blood pressure, all symptoms one may feel when anxious. Other common physical symptoms of anxiety include chest pain, nausea, headache, or dizziness. Even some psychological symptoms of anxiety may occur which include irritability, obsessive thinking, panic, or poor concentration (Small & Vorgan, 2019). When constantly feeling these symptoms of anxiety, it can make it extremely difficult for people to live their life. It can take a toll on us physically, emotionally, and mentally.

Causes of anxiety in athletes

Athletes can experience anxiety just like the general population can, but they may “present differently than other cohorts such that there are important considerations” to be made when diagnosing this group (Reardon, et al., 2023). This is because athletes are all so different; they can differ in age, gender, sport type, individual vs. team sport. All these factors must be taken into account in order to properly diagnose and treat an athlete with anxiety correctly. A meta-analysis was done to examine clinical information on individual versus team sport athletes and their anxiety causes and symptoms.

Causes of anxiety in individual sport athletes

Individual sport athletes may be at a greater risk for anxiety because of the motivations behind participating in an individual sport rather than a team sport. Examples of these sports would be gymnastics, golf, or track and field where the competitors are scored based on their own performance. Starting at a young age, athletes may want to join an individual sport because of goal-oriented reasons like winning scholarships or staying in shape (Reardon, et al., 2023).

Individual sports are stressful because it is all up to one person whether they perform well or not. This can create a great amount of pressure on an athlete because they know it is

dependent on only themselves to impress a judge. This may cause individual sport athletes to “be relatively more perfectionistic, set extreme personal goals, internalize failure after loss, experience less social support, train in a single sport throughout the year, and suffer injuries, all of which may lead to anxiety” (Reardon, et al., 2023). Athletes may be more perfectionistic and stricter on themselves because they do not have anyone else to rely on to help them perform, and this could possibly lead to setting extreme personal goals. These goals may be unrealistic and actually cause harm to the athlete’s mental and physical health. This may lead to them training harder, longer, and all year round, never taking a break from their sport. Sometimes overtraining can be damaging to an athlete’s body and can cause injury which only leads to more anxiety.

Because these athletes compete by themselves, this may also mean that they will lose by themselves which can lead to harsh self-blame and negative thoughts about oneself. It can be difficult not having the social support of teammates and others to cheer one on during success and cheer one up during loss. There are so many factors that come into play when dealing with individual sport athletes’ anxiety. All these factors can cause a snowball effect where one small hiccup can lead to many stressors, and this will ultimately lead to high anxiety in these athletes.

Causes of anxiety in team sport athletes

On the other hand, team sport athletes have their own unique causes of anxiety that are just as severe and important to take into account. Team sports will be those like football, basketball, and volleyball which rely on team cohesion and teamwork to perform well. Usually, athletes who join team sports at a young age “tend to trace the origins of their participation to a desire to have fun with friends” (Reardon, et al., 2023). Team sports can be a great opportunity to make new friends, work on teamwork, and have a support system.

A study was conducted to examine if athletes in team sports are less likely to suffer from anxiety than athletes in individual sports. Anxiety was compared between athletes in individual sports such as gymnastics, running, and diving, and athletes in team sports like soccer, football, and hockey. From self-reported diagnoses, anxiety did tend to be lower in team sport athletes, but this may have been because of the general benefits of “physical activity rather than the culture of teamwork in which group athletes train and compete” (Pluhar, et al., 2019). Sometimes, having teammates can cause problems, so these athletes are still prone to developing anxiety. Athletes can experience anxiety “as a result of competition, team dynamics, or coaching issues” (Pluhar, et al., 2019).

In order to compete as a team, one must make the team first which comes with its own set of stressors. This causes competition amongst teammates and battling each other for a spot on the squad, so sometimes this could cause drama and bullying which is not good for an athlete’s mental health. And even once one makes the team, there will always be that want to compare one’s abilities to another member of the team’s abilities, or that pressure to be the best on the team. Although teammates can be a great source of social support, there are also so many ways that they can become an athlete’s main competition. Furthermore, sometimes because of this high level of competition between teammates, this can disrupt the team dynamic by pitting everyone against each other. This negative energy can cause negative effects on performance and mental health.

And finally, coaches can also cause drama on teams, like showing favoritism and putting too much pressure on their players. Coaches can be great mentors toward their athletes, but sometimes they can also an athlete’s biggest critic, and that can become hard on an athlete’s self-esteem. These are all just a few of the factors that can cause anxiety in athletes, and they can also

develop it from reasons that the general population does. They are also normal human beings that have relationship problems, financial burdens, and fear of public embarrassment in the media.

The symptoms of anxiety an athlete experiences can be detrimental to not only their mental health, but also their performance. Anxiety can affect their “attention, executive functioning, information selection, muscle tension, and stimulus processing” which are all used when performing their sport (Reardon, et al., 2023). Athletes not only experience anxiety, but also competitive performance anxiety. This is when an athlete has a fear “occurring around the time of sport participation...that they will not be able to perform in the desired manner, that the situation will be too challenging, and/or that it will be dangerous” (Reardon, et al., 2023). This can come with symptoms of dry mouth, flushed skin increased respiratory and heart rates, shakiness, and sweaty hands.

All these symptoms can make it impossible for an athlete to perform to their greatest potential and may even lead to a “slump” or a “choke”. A “slump” would be when an athlete performs at a lower level than they are capable of, and a “choke” would be messing up in high stakes circumstances (Reardon, et al., 2023). In conclusion, anxiety in athletes can present itself in many different ways and can be experienced in many different forms, but they can all be extremely damaging to an athlete’s mental and physical health and performance.

Treating anxiety in the general population

When treating anxiety, there can be many different approaches depending on the level and severity of one’s anxiety. There are some approaches one could take to reduce their anxiety, and there are also conventional approaches, and convention therapies. Strategies to reduce one’s own anxiety should usually be used when symptoms are mild. For example, if one has minor anxiety that occurs on and off, and is minor, they could try simple tasks like talking to a friend or

loved one, learning what triggers their anxiety, and keeping a positive mindset (Reardon, et al., 2023). Conventional treatments should be sought out when one's symptoms progress or are severe. This could look like seeking out a therapist for medication or a type of talk therapy.

When people are feeling anxious and uncomfortable, their natural response is to find a way to relieve this discomfort. Luckily, there are strategies one can use to try to reduce their symptoms of anxiety. The first strategy would be participating in regular physical activity. Cardiovascular conditioning has been proven to boost one's "memory, mood, and energy while reducing brain-damaging neural inflammation" (Small & Vorgan, 2019). In other words, exercise gets our hearts pumping more oxygen and nutrients into our cells, and this boosts one's physical and mental energy, ultimately reducing anxiety (Small & Vorgan, 2019).

Another way to reduce one's own anxiety would be to get enough sleep at night. Anxiety at bedtime can keep a person up all night, and insomnia – which refers to trouble falling asleep, staying asleep, or waking up not refreshed – is often anxiety related. Some tips to improve sleep would be to adhere to a regular bedtime, do not consume caffeine in the evening or surf the internet right before bed, and try listening to calming music (Small & Vorgan, 2019).

Finally, journaling can be a great way to "gain perspective on [one's] worries" by reflecting on our past experiences and learning from them (Small & Vorgan, 2019). Writing about one's worries can be a great way to vent about feelings without talking to someone about it. The easiest way to effectively journal would be to find a quiet place and just start writing whatever comes to mind. This can be very relaxing and can overall reduce one's anxiety symptoms.

When anxiety symptoms are starting to disrupt a person's life, then it is time to investigate conventional treatments to reduce anxiety. It is important for one to find a therapist

who they can feel comfortable communicating with without feeling judged. Therapists can prescribe medications like antidepressants, benzodiazepines, and beta-blockers which can control many symptoms (Small & Vorgan, 2019). It is important to keep in mind that all medications can have pros and cons, for example, anxiety symptoms may decrease, but a patient may also become dependent, or hooked, on this drug (Small & Vorgan, 2019). This is the type of information that therapists and their patients should know before a medication is prescribed.

A different approach would be to use talk therapy, and there are many different types depending on the severity of one's anxiety. Cognitive Behavioral Therapy helps patients "identify the triggers, thought, feelings, and behaviors that are linked to their anxiety" and then learn more realistic thoughts and beliefs. Many times, one's anxiety stems from thoughts or feelings that they make up or are not real, so this technique gives an alternative mindset to a patient – one that is less anxiety inducing (Small & Vorgan, 2019).

Exposure therapy is another technique used where patients will "face their anxieties through exercises that expose them – usually gradually – to situations or objects that stir up their anxiety" (Small & Vorgan, 2019). In other words, when a person is scared of a situation or object, they may go out of their way to avoid it, but exposure therapy does the opposite. Patients will face their fears in baby steps, gradually being exposed to more of what they fear, and this will ultimately desensitize them to that fear (Reardon, et al., 2023). There are many other therapies that a therapist can utilize for their patient, it just depends on the situation, but these techniques have been shown to have a major impact on reducing anxiety.

Treating anxiety in athletes

When an athlete is committed to their sport, it can become a huge part of their lives and take up a lot of their time and energy. "The [athlete's] search for physical perfection and a strong

desire for success” can become a concern as to whether an athlete can “withstand the stress of intense competition” (Coelho, et al., 2012). Most athletes are perfectionists in their sport, so they are constantly looking for ways to improve, new techniques, and ultimately, ways to win. This constant worry can become mentally draining in a sports situation that is already stressful to begin with. Athletes compete at high levels of intensity, so the higher the intensity the higher the stress. Every athlete wants to win, but they all cannot.

When diagnosing an athlete, “clinicians should consider athletes’ unique biopsychosocial contexts” (Reardon, et al., 2023). This means looking at one’s biology, for example, their genetic makeup and any diseases they may have. It examines one’s psychology such as attitudes, motivations, and thoughts. And finally, the biopsychosocial model considers the social aspects of one’s life like one’s relationships with friends and family and social support one may or may not have. It is crucial that athletes can find the right treatment for their anxiety that will benefit their mental and physical health and performance. Furthermore, whether an athlete is in an individual sport or a team sport can affect the type of treatment they should receive. Athletes may get the same treatment as the general population, but it will usually be more centered around their performance.

Treating anxiety in individual sport athletes

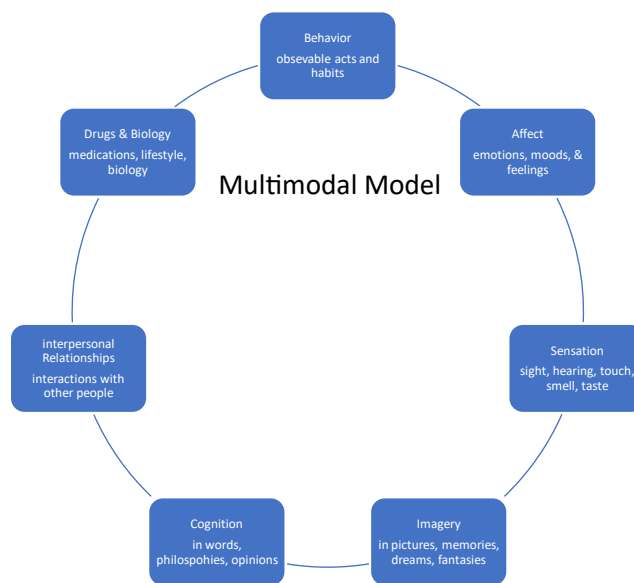
Athletes in individual sports can feel a different type of anxiety because in their sport “success depends solely on one person” so an increased amount of anxiety can occur (Vu & Conant-Norville, 2021). Athletes who present mild to moderate anxiety symptoms should take nonpharmacologic approaches, being treatments other than medication. Many athletes and their doctors do not want them to be on anxiety medications because of the potential side effects.

One beneficial treatment for athletes in individual sports would be imagery which “programs the mind to react optimally” (Coelho, et al., 2012). In other words, an athlete would mentally imagine how they should feel, think, and perform, and then physically carry out the task in this way. This technique should “improv[e] athletic and learning performance” and can also lead to “lower stress and higher confidence” (Coelho, et al., 2012). Athletes will be able to modify their negative thoughts and learn effective coping strategies instead. The method of imagery is crucial to successfully build an athlete’s self-confidence and control any competitive emotional pressure they may be feeling before performing.

A study on elite tennis players was conducted using a multimodal treatment group and a control group which was given no treatment. The multimodal approach considers seven different factors: behavior, affect, sensation, imagery, cognition, interpersonal factors, and biological considerations. The interactive impacts of all these factors are examined to find out if this method can diminish anxiety (Coelho, et al., 2012). The multimodal imagery group was trained in how to use imagery to promote self-confidence and they were given positive feedback on their performance.

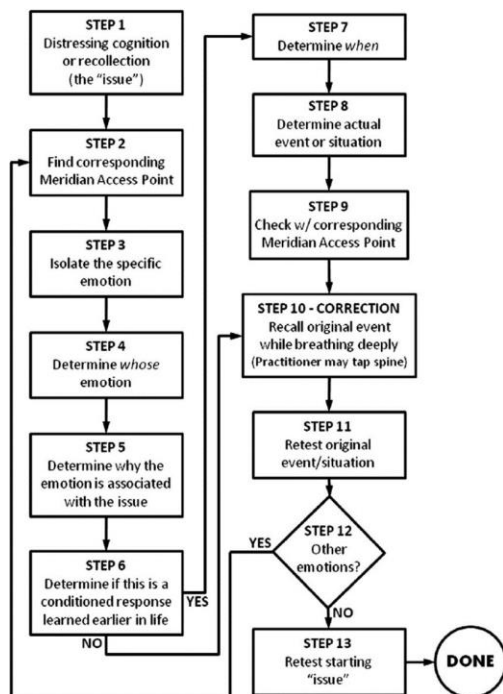
First, the players practiced a relaxation method with their coach and the researcher in a quiet room. The players were directed to visualize themselves successfully playing their sport and then they were taught “how to generate positive thoughts regarding their skills, how to overcome negative thoughts before and during games, and to imagine a positive outcome” (Coelho, et al., 2012). In the control group, athletes were instructed to remember good moments they had experienced in the past or imagine being on the beach or the countryside.

The multimodal intervention, which included not just imagery but also relaxation and a behavior modeling video, supported the hypothesis that building an athlete's self-confidence using this technique would lower pre-competition anxiety. In a sport like tennis, which requires “fine and accurate movements and are relatively long in duration with many short bursts”, it is crucial to build and maintain confidence in one's abilities. Imagery interventions can lead to increased sport-confidence and feelings of total control over time. High confidence can protect an athlete against “debilitating mental interpretations associated with competitive anxiety in stressful situations” (Coelho, et al., 2012). In other words, negative mental thoughts can be controlled by mental practices like imagery to decrease an athlete's anxiety.



Powerlifters are another individual sport athlete that compete alone and in front of an audience which can induce performance anxiety. In this study, Neuro Emotional Technique (NET) will be used to reduce the amount of anxiety powerlifters may feel before they compete (Jensen 2010). NET is a mind-body technique that focuses on an athlete's concerns regarding their upcoming competitions and aims to remove neurological abnormalities like anxiety. NET uses the assumption that unresolved emotional trauma is stored in the body as toxins and can affect one later in life in the form of anxiety. During the procedure, many factors are examined

such as cognitions, or the athlete's anxious thoughts about the upcoming competition and their response to it. Emotions, like the athlete's effect on mood in response to their upcoming competitions, are considered. And finally, behaviors, like avoidance, in response to competition, are examined for a physiological reaction in the athlete (Jensen 2010).



Although “a certain level of anxiety enhances performance, uncontrolled emotions and negative [thoughts] can have adverse effects” (Jensen 2010). Two athletes volunteered to participate in this study: an elite male competitor and a novice female competitor. The treatment is done by a chiropractor who conducts a muscle test throughout the NET procedure to assess the participant's physiological reactivity to the questions asked (Jensen 2010). When the physiological reaction is found, the practitioner can then help the participant determine why the emotion is associated with their anxiety symptoms. The participant can then decide how the emotion fits the distressing situation, and while they recall that event and feel that specific emotion, the practitioner will tap their spine. Finally, the procedure will conclude when the athlete no longer feels anxiety that they had been associating with certain situations (Jensen

2010). The results of the study showed an improvement in mental and physical anxiety in both of the athletes.

Cognitive Behavioral Therapy is considered by psychologists the most evidence-based treatment for many different psychological problems. In sports, CBT works to change an athlete's dysfunctional performance related behaviors into optimal and functional behaviors. This can look like an athlete who usually avoids anxiety provoking situations to putting themselves in high anxiety situations, but they can mentally and physically handle it will (Gustaffson et al. 2017).

One type of CBT that physicians will often use to decrease anxiety is exposure therapy. This therapy works by simply exposing someone to a situation that may scare them or induce anxiety until they do not feel that fear anymore. By repeated exposure to a perceived threatening stimulus, “extinction of the autonomous alarm signal...can be obtained” (Gustaffson et al. 2017). In other words, by helping a client through a series of exercises that induce a feared stimulus, our body can reduce the urge to fear those stimuli.

A study was done involving a 17-year old female cross-country skier who was considered a promising elite performer. But lately, she had been underperforming, based on her standards, so she was “training too much and too intensely” which led to prolonged fatigue (Gustaffson et al. 2017). She ended up finishing last in one of her competitions which led her to feel ashamed and anxious before her competitions. The skier composed a list of her feared situations arranged from least to most fearful. With this list, the psychologist could “help the athlete understand that the symptoms of anxiety, although perceived as frightening, actually were harmless” (Gustaffson et al. 2017). To figure out what anxiety symptoms she feared, exercises like holding her breath and spinning in a spinning chair were implemented. Shortness of breath and dizziness were the

athlete's feared symptoms, so to handle this in competition, she could slow her pace. These breath-holding and spinning-in-a-chair exercises were repeated in her sessions and quickly her levels of anxiety decreased. As a result, through the exposure to "harmless physical sensations, the athlete increased her confidence in her ability to tolerate symptoms" (Gustaffson et al. 2017). Especially in individual sports, exposure therapy is a beneficial way to manage anxiety and even embrace anxiety provoking situations.

Treating anxiety in team sport athletes

Anxiety in a team sport can look different than in an individual sport because although performing by oneself can put a great amount of pressure on that one person, performing with a team creates pressure that comes from one's own teammates or coach. An athlete may get benched by their coach during the game, and this can cause "positive and negative emotions arising from corresponding facilitative and debilitative appraisals" (Gross et al. 2017). For example, being pulled out of the game because the coach needs to game plan with the athlete can cause excitement for the athlete, but being pulled out for making a mistake can cause disappointment and anxiety for the athlete.

Resonant frequency training (RFT) is a technique used for athletes to focus on their breathing in order to reduce mental and physical competitive anxiety symptoms (Gross et al. 2017). RFT uses a heart rate variability (HRV) biofeedback technique that shows the athlete their heart rate while they are anxious versus relaxed, and it aims to teach athletes breathing techniques to calm them down. If an athlete can see that a situation causes their body stress, then maybe learning a coping technique, like breathing patterns, can stop a situation from causing them anxiety in the first place.

A study was conducted where Louise, an Olympic Trap shooter, was experiencing negative thoughts and emotions between shots, and especially after missing targets. During competition there is a one-minute break between shots to prepare for the next round. Louise tried reciting songs to calm her anxious thoughts, but this technique was not consistently effective for her. RFT could be suitable for Louise because of the “cognitive and somatic anxiety relieving effects of HRV feedback” that could help her regulate her emotions in between rounds (Gross et al. 2017). Louise’s psychological measures were captured by a device called a Hexoskin that could show her live respiratory data through a PPG and respiration sensors. Many sessions were conducted where Louise would be connected to a PPG and respiration sensors while performing her sport. For her base data, she was asked to relax for 5 minutes, and then she completed a resonance frequency (RF) estimation that guided her breathing. In later sessions, Louise would guide her breathing all by herself and imagine herself performing shots (Gross et al. 2017). And then at the end, she would put it all together in a simulated competition.

Louise’s RF accuracy between shots was measured during a simulated Olympic Trap round with five other competitors. She practiced her breathing techniques during breaks, and especially if she missed a shot, and she wore the Hexoskin during the simulation which showed a lowered respiratory rate. After a year of using RFT, Louise described that her scores had increased, and she can now keep calm during her rounds (Gross et al. 2017). RFT raises “an athlete’s awareness of their psychophysiological response to stress,” and it teaches a technique to “combat cognitive and somatic anxiety,” which is possible to apply in sport competitions (Gross et al. 2017). It is important for an athlete, especially in a team sport, to be able to calm their own heart rate during time outs, substitutions, and, if needed, quickly in a game.

In sports contexts, two factors during competitions usually lead to the perception of threat which causes anxiety: “(a) uncertainty about the outcome,” like winning or losing, or “(b) “importance of the outcome,” such as obtaining intrinsic or extrinsic rewards (Pineschi & Pietro, 2013). Especially in team sports, teammates must rely on each other to win matches, so they may be unsure whether the team can pull off a win or not. The outcome may present different rewards to different players on the team, such as winning may guarantee a scholarship for one athlete, or a loss may encourage another athlete to quit the team. Anxiety can come from many different places for each player on a team, so it is important for athletes to be trained in relaxation skills.

Progressive relaxation is a technique that athletes can use where “mental relaxation results from body relaxation,” and this can be used to decrease anxious thoughts (Pineschi & Pietro, 2013). This method requires the tightening and relaxing of specific muscle groups in order to eliminate tension in these areas. An athlete will progressively go from one muscle group to the next becoming aware of the “presence and absence of muscle tension” (Pineschi & Pietro, 2013).

Once the athlete has become capable of this process, then they will be able to remove unwanted tensions in the muscle group without even having to tighten them first (Pineschi & Pietro, 2013). They should be able to feel the tightness of their body, become aware of it, and voluntarily relax. This technique can take place before a competition, in which an athlete takes about 20 minutes to go through all muscle groups. They can start with their “left arm, right arm, left and right legs, abdomen, back, and chest and shoulders,” and then end with their neck and face muscles (Pineschi & Pietro, 2013). This could be a routine that team athletes could carry out together before each competition to calm their nerves and decrease anxiety. Teammates should

help each other and hold one another accountable, and also not judge others, of needing ways to just relax their bodies before stressful period of time.

Another great treatment option that athletes in team sports can turn to decrease their anxiety is positive self-talk. This method can help athletes “focus attention on skills and strategy, increase motivation, and manage levels of arousal” (Van Raalte et al., 2017). It is important, though, that attention is paid to each athlete’s individual differences, such as their thoughts, feelings, and preferences. The complexity of sport contexts and sports performance is also determinant of the self-talk an athlete should use (Van Raalte et al., 2017). Sport psychologists use this method to eliminate negative self-talk through strategies like thought stoppage and self-talk replacement (Van Raalte et al., 2017). For example, an athlete should replace saying “I can’t hit anything today” with a more positive self-talk like “I can do it” (Van Raalte et al., 2017). Practicing optimism helps decrease anxiety symptoms in anyone, but especially in athletes facing negative comments from teammates, coaches, or themselves.

The case of Aaron, a hockey player struggling with negative and anxious self-talk, is used to demonstrate how effective positive self-talk can be to an athlete’s performance. At the end of a hockey practice, the team is doing a drill that involves battling for the puck in the corner of the rink. The team is celebrating their teammates and even taunting their opposing teammates. When Aaron loses the puck, he becomes frustrated and yells “I am so bad!” (Van Raalte et al., 2017). After practice, the sport psychologist talks to Aaron and comes to the conclusion that he was just tired and frustrated from a long practice. Aaron explains that he is usually good at that skill, therefore he realizes that he is not bad at hockey, he was just having an off day. The psychologist states to Aaron that if he ever feels the urge to think bad thoughts about himself again, that he should question whether he is just tired or having an off day rather than thinking that he is no

good at hockey. This will give him the chance to regroup and stop those negative thoughts from entering his mind and affecting his physical and mental state (Van Raalte et al., 2017).

If an athlete seems to be overtired or overloaded, the best thing to do would be to suggest relaxation and taking a few moments to regroup (Van Raalte et al., 2017). Fatigue can bring negative and anxious thoughts to an athlete which can result in below optimal performance. The athlete should understand that this state is temporary and that sleep and rest can help with these anxious thoughts.

Self-talk interventions should involve “positive, instructional, and motivational self-talk [to] enhance [their] sport performance” (Van Raalte et al., 2017). For example, to avoid becoming frustrated with themselves, athletes should be understanding with themselves and note that they are in a unique position that comes with a great amount of pressure. Everyone has off days, so why should they feel the need to be perfect all the time? This will just put negative thoughts into their mind which can make them anxious when it comes to performing. Self-talk can be extremely beneficial to athletes in team sports who may not have the most supportive team and need to find their motivation from within. They also cannot let little mistakes define their performance, so self-talk can help focus on the good in the situation.

Treating anxiety for either individual or team sport athletes

Mindfulness is a method used to regulate an athlete in either a team or individual sport's emotions and behaviors (Sánchez, et al., 2023). This treatment is a form of meditation that involves the intentional and non-judgmental awareness of physical and mental sensations. In other words, mindfulness directs an athlete's attention towards coping with pressure they feel instead of mentally shutting down (Sánchez, et al., 2023). Because possessing good physical skills alone does not guarantee optimal sport performance, trainers have “started to take the

psychological skills and personality characteristics of players seriously” (Sánchez, et al., 2023). Sport professionals are becoming more thoughtful when it comes to anxiety and are focusing on techniques like coping, concentration levels, and relaxation, all of which mindfulness includes. The reason why mindfulness can be used for both team and individual sport athletes is because mindfulness can bring out who a player is and also who that player is as part of a team.

This study included athletes in both individual and team sports such as tennis, swimming, basketball, handball, volleyball, and football (Sánchez, et al., 2023). The design of this particular study was a quasi-experimental design with a group who received the mindfulness intervention and a control group who were told they were wait-listed, so they did not receive treatment. The study sample was obtained by convenience sampling where a course called “The development of mindfulness in sport” was offered for athletes at a University (Sánchez, et al., 2023). This course held weekly sessions consisting of “learning and daily practice for 40 minutes of a meditation technique...called Flow Meditation” (Sánchez, et al., 2023). Athletes were given instructions on how to meditate at home, or maybe before a competition, and to let whatever thoughts rise during the meditation flow. The main objective is to set their thoughts free and accept them for what they are.

Mindfulness interventions do not focus on directly altering dysfunctional thoughts or emotions, it focuses on the athlete’s relationship with their physical and mental stress (Sánchez, et al., 2023). A person’s flow state is where the mind and body work together to gain an optimal state of awareness and connectedness to what they are doing. Experiencing the flow state “is associated with a positive impact on self-perceived sport competence and sports performance” (Sánchez, et al., 2023).

Athletes who compete as individuals may have difficulty with their self-confidence when it comes to their performance which can come with anxiety symptoms. Mindfulness helps an athlete focus on the here and now and not outside factors like what others are thinking. The results of the study showed an increase in the variable of self-confidence and promoted sports performance (Sánchez, et al., 2023). As a result, this prevented the “onset of mental disorders and improving quality of life” (Sánchez, et al., 2023). The reduction of negative emotions, such as anxiety, decreased irrational beliefs like perfectionism, decreased worry and self-judgement, and increased positive emotions like confidence (Sánchez, et al., 2023). This treatment can be extremely effective for athletes in individual sports who feel anxious from the pressure of an audience or unrealistic self-expectations.

In addition to problems with self-confidence, athletes, usually team sport athletes, can struggle with negative thoughts that come from their own teammates. Team dynamic is crucial in order for a team to be successful, and without it, a team can crumble. Tension between teammates can come from jealousy, competitiveness, or even stress. This can put anxious thoughts into players’ heads if the culture of the team is negative.

Mindfulness not only decreases tension, depression, and anger, but also increases “concentration and emotion regulation in athletes” (Sánchez, et al., 2023). Furthermore, research shows that from mindfulness comes a “reduction in depressive symptoms and an increase in psychological well-being and self-compassion” (Sánchez, et al., 2023). Mindfulness should be practiced as a whole team if there are issues with tension because they should be working together, and not against each other. They need to focus on the present and on being successful as a team, not as an individual. Mindfulness therapy can help athletes get their mind right so their performance can become optimal as well.

Case Study of Justin the football player

It can be difficult for one to really get a sense of how an athlete is diagnosed and treated for anxiety without looking at an example. The case study of Justin, an athlete struggling with anxiety, will demonstrate how important it is to understand the athlete on a deeper level before treating them. Justin just turned 22 and is a junior at Texas State University where he studies Mass Communication. He has loved the sport of football since he was in elementary school, so it is not a surprise that he pursued a spot on the Texas State football team, and he made the team.

Justin is the kicker for the team, which is a popular and sought-after position, so he is not sure if he could make it to the professional level. He wants to become a professional kicker but doubts himself and his future. Justin is dissatisfied with his perceived amount of success in his life even though he has accomplished many of his goals. He graduated in the top 10% of his high school class, he makes the Dean's List each semester, and he is a starter on the football team. Although he goes on a good amount of dates with girls, Justin is not in a committed relationship, but wants to be. When he thinks about his future, in football and in general, he gets anxious, and his stress levels rise.

The first way to help Justin after getting to know him is to find out the main source of where his anxiety is coming from. The psychological problems that he is especially facing are fear of failure and lack of confidence which can definitely cause anxiety. In sports, the quote "If you have confidence, you can do it" is widely used for athletes (Park & Shin, 2023). Confidence has a crucial role in sport performance, and research shows that "high confidence [i]n their ability can lead to improve actual performance, while low confidence can result in low performance" (Park & Shin, 2023). This just goes to show how important our thoughts really are to our success and failures in life.

Low confidence comes with anxiety and negative thoughts about oneself, so an athlete needs confidence in order to thrive. Confidence also affects one's behavior, like how much effort to exert and how long to endure difficulties. People with high confidence will work harder and endure longer than those with low confidence who avoid tasks altogether (Park & Shin, 2023). If Justin increases his confidence, he will be able to put effort into what he does, be able to overcome difficulties, and not be so scared of failure.

In order for Justin to decrease those anxious thoughts popping up when he thinks about his future, he should use the method of imaging success. An athlete who visualizes their own success can have a lot of influence on their performance (Park & Shin, 2023). This technique is comprised of two factors that will increase one's ability to imagine their success which are vividness practice and control practice.

The first thing Justin needs to do is find a quiet time and place to sit or lie down comfortably and just relax by slowly and deeply breathing (Park & Shin, 2023). Vividness practice will help the athlete accurately picture in their mind exactly where they want to be. For Justin, he could be standing on a football field by himself. He should think of as many details as possible, like each yard line on the field, which way is the wind blowing, or how soft the ground is. Next, he should imagine the uniforms of both teams, himself taking practice kicks before the game starts, and where the ball goes. Then, he can think of a scene where he is playing with others on the team and prepare for everything one would experience when playing football with their teammates. Justin should think of sounds and smells, and even how he feels his emotions during and after the game (Park & Shin, 2023). All of these images will better prepare Justin for competition so that he stops experiencing anxious thoughts and symptoms. He can even image

success when he thinks about his future, like imaging making it to the professional level, being in a committed relationship, and being happy.

In imaging success, control practice also plays a role in the process. Justin should imagine himself about to kick a field goal. He must think that he is better than his opponents and he can successfully make the ball through the 2 poles. But he should also prepare and imagine if things do not go his way, and he should picture overcoming his mistakes, the referee's misjudgment, or other bad luck that may occur (Park & Shin, 2023). This will ensure that he prepares for the best and the worst, and he will be able to handle whatever may happen. Lastly, Justin can go back to normal breathing, "finish the mental training by moving [his] fingers for the first time," and open his eyes by moving his feet back and forth (Park & Shin, 2023). Now Justin should be able to control any emotions or anxious thoughts that may arise when he thinks about football and his future. Imaging success frequently should even decrease the number of times that anxiety occurs, and he should be able to think about these things freely.

Another method that Justin could use at the exact moment he feels anxiety is relaxation training. This method does not get rid of one's anxiety but actually uses it to their advantage (Osborne, et al., 2017). For example, as soon as Justin starts thinking about football and his future, he should start relaxation training. First, Justin should be in a relaxed state and decrease his muscle tension and slow his breathing. Once he is relaxed, he will be asked to think about situations that usually make him anxious, such as his future in football. Then, he will invoke relaxation again so that "the relaxation technique will eventually bond to the stimulus event originally associated with anxiety" (Osborne, et al., 2017).

Now, when Justin thinks about his future, those thoughts of failure should actually "evoke a relaxation response" and his anxiety should no longer be present (Osborne, et al.,

2017). Relaxation training is a great technique for someone like Justin who experiences a great amount of pressure in competition and in their daily life. Whenever those anxious thoughts come about, he can change them from being debilitating to being not that big of a deal. These feelings can actually make him feel relaxed and his performance can even improve.

Summary

Anxiety is a normal response that everyone may feel at least once in their lifetime. Sweaty palms, a pounding chest, shortness of breath. Symptoms like these can make a person feel like something is wrong with them, especially if these symptoms keep recurring and getting worse over time. Everyone's anxiety may present itself in different ways and in different situations. Those in the general population may develop anxiety from their parents, such as genetically or through something called the chameleon effect, where we unknowingly start acting like someone we spend a lot of time with. So, if one's parents are pessimistic and anxious people, then their children are likely to become the same way. Work and school can cause anxiety from the workload one may put on themselves or tension with coworkers and classmates. Technology is also a common source of stress because one is constantly bombarded with world news, what amazing trips people are going on, and the urge to compare oneself with others. There are also avoidable, physical stressors people may put on themselves like simply being hungry, not getting enough sleep, or long stretches of sitting down.

Athletes may face anxiety coming from different sources because of the busy and high-pressure lifestyle they live. And depending on whether they are in an individual sport or a team sport can determine where their anxiety may be coming from. Those athletes in individual sports may be more perfectionistic because they must perform by themselves. They can set extreme personal goals and internalize failure if they lose. They can also overwork themselves and suffer

injuries because of it. Individual sport athletes also have less of a support system which can become lonely. On the other hand, people who are supposed to be a support system may actually be the ones causing anxiety, especially in team sport athletes. A team's dynamic can make or break a team, and when teammates are comparing each other to themselves and constantly battling over who's the better athlete, this can cause negativity and anxiety. Also in team sports, coaches may treat teammates unequal and critique some more harshly than others.

Ways to treat people in the general population may differ from how to treat athletes because of the different lifestyles and different sources of stress. Treating those in the general population with mild anxiety can look like talking to a loved one, exercising, getting more sleep, and journaling. When anxiety becomes more severe, one should seek out a therapist for more conventional treatments like medication and cognitive behavioral therapies.

Athletes in individual sports require treatments that help them with thoughts that usually come from themselves. These treatments can include imagery, neuro emotional technique, and exposure therapy. Athletes in team sports should seek out treatments that can help them with thoughts from a negative team culture or also internal thoughts. Resonant frequency training, progressive relaxation, and positive self-talk should all be beneficial for these athletes. For both individual and team sport athletes, mindfulness can be a treatment because it can focus on the athlete as one or the athlete as part of a team.

The case study of Justin helps demonstrate how each athlete that needs help with their anxiety will be different and need a treatment that is unique to them. Because he became anxious when thinking about his football career, it was best to teach him how to improve his confidence, image success, and implement relaxation training.

In conclusion, anxiety is not a great feeling to live with no matter what kind of lifestyle a person lives. Therefore, it is so crucial to a person's mental and physical health to seek out the best treatment for their unique needs.

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