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**BACHILLERATO EN CIENCIAS**

**MONOGRAPH**

**INFLUENCE OF STRESS ON TEENAGERS' PHYSICAL AND MENTAL HEALTH**

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## GRATITUDE

First of all I would like to thank God for giving life and everything I have and love, I will live to thank my family, more importantly my parents who supported me every moment with their patience and kindness, they gave me the opportunity of having a high education in a prestige institution, which provided me knowledge and religion. One of the benefits of going in this school is the friends I have acquired through the years; they are supportive and push me to be better, because of this and much more I'm so thankful with them.

At last but not less important, I'm grateful with my teachers and tutors who guided me all this years with acquaintance and gentleness and saw things and talents I didn't know about myself, without them I probably won't be the woman I am today, to my monograph tutors I would like to thank for all the advices and help they lend me through the time of fulfilling the monograph.

Everyone I mention in this page are the most important people in my life, I just want to let them know I am so beholden with them and I wish them the best in their lives.

## SUMMARY

Teenagers are the most exposed to stress in the actuality, this problem affects their physical and mental health, influencing their grades, way to think and behavior, stress can have a positive influence in some ways, but it always has to be control before it harms the subject.

There are three types of stress, two of them are common in a human life, actually, it is necessary, it is part of our nature, but once it goes chronic is worrying, it can break the person, they will never be the same and it can take them to death.

Stress affects every human and animal, lately the sort of people who is more affected are the teenagers, because the time have changed and society expects more from the young generation, to keep evolving and be the future we all desire. In addition, kids are most naive and easy to manipulate, these characteristics are so pure and the community we live on nowadays is so rotten and evil that it corrupts the kids' minds with traumatic events that will probably hunt them and will not let them develop, as they should have.

Normally people when they have stress they do nothing about it, they just wait till it disappears by itself, but they shouldn't do it, by doing that it just gets worse, it is so easy to just do some relaxation exercises to keep it under control.



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## **INTRODUCTION**

Through this monograph the author tries to make known what is stress, although stress has been since the beginning of times, people don't always know the symptoms, consequences or treatment for it, because the ignorance of the host, the effects can become harmful not just for the host's life but for the ones around them.

Stress produce many types of changes in someone's life, the changes can be good at some point or it might be reckless and destructive, when someone is stressed out they have to do something about it and in this monograph the author write about some techniques that can be helpful to reduce the problem.

In the first chapter, "Generaties of stress" the author let to know basic information or as the title says general information about stress and why is it important to have knowledge about it. The second chapter "Mental and physical changes caused by stress in teenagers" talks about how stress really affects the human body and mind, triggers that might appear in adolescence or childhood and finally in the third chapter "Mechanisms of control in teenagers" goes into the ways of managing stress in a healthy techniques and easy to follow.

## **Chapter I**

### **Generalities of stress**

#### **1.1 Types of stress.**

Stress is a tension caused by a situation or thought that can put the person nervous, angry or frustrated. Due to the influence of stress the subject can react violently, for this reason, the person enters a state of "fight or flight". There are different kinds of stress like acute stress, episodic acute stress, and chronic stress, this types of stress have their own symptoms and treatments.

The acute stress is the most common one, it comes from pressure from a recent past or near future, it could be thrilling but in small doses because too much of it might be harmful for your health, it can become into anxiety and upset your physical health.

Some of the most common symptoms are:

- Emotional distress such as anger, depression and anxiety.
- Muscular problems, like headache, pain in the jaw and the back.
- Upset stomach, stomachache, flatulence, diarrhea or constipation.
- Elevation of the heart pressure, tachycardia, sweaty palms, dizziness.

The episodic acute stress is when someone suffers constantly from acute stress, their life is somewhat messy, and everything that can go wrong in their lives, goes wrong it is like bad luck.

It is quite normal if the people who suffers from acute stress frequently are grumpy and anxious, most times they have a lot of energy but it's because they are always in a rush, as this



feeling remains the person becomes more irritable, with this comes hostility so this person develops an abrupt personality so their old relationships get deteriorated. The symptoms are similar to the acute stress but in this case, the heart is more affected, professional help is needed.

The chronic stress is not thrilling at all, this stress is the one that can destroy you, it ruins your body, mind and life, it can be from a dysfunctional family, traumatic experiences, a really bad economic situations or a problem that has been going on for a while that really gets in your head and you can't find a way out of it, the chronic stress is like a bomb inside the body, it can explode anytime hurting the people around, that is why if you are in these kind of stress you need immediate help from a professional, one of the worst parts of this disorder is that the person who is going through the problem usually forgets that they have it, they get used to the feeling of emptiness and do nothing about it, the stress reaches the point that the subject gets violent, ill or even commit suicide, affects people of all ages, the younger the faster it takes the body and mind, adversely affect the immune, cardiovascular, neuroendocrine and central nervous systems.

## **1.2 Is it common in teenagers?**

Stress is very normal or usual in teens because they are in a constant pressure because nowadays the world have become a competition, if someone don't have a degree in a field or certificated they have not succeed in life, there is always someone better than you, with more knowledge or more “talented”, that's the reason why family, friends, coaches and school pushes the teen to improve everyday, people expect them to be perfect.

In the adolescence we experiment new things, feelings and even thoughts, and we all want to be accepted in society, because of that the social media has a significant impact in the

adolescence and the whole world. The person is leaving the childhood to become an adult but that step requires a process where he or she are most exposed to be hurt or lost in the way. So beside the regular angst of the age the pressure of not being someone in the future is added, young people get depressed and anxious, well it doesn't matter the age, everyone can get depressed but, teenagers at being exposed they go to a very drastic point and think they're alone, this feeling goes on and on till they think and really considerate to kill themselves, these thoughts are very worrying and have to be taken seriously. The human mind is very fragile and powerful, it is the part of the body, the part of the human being that make people who they are and makes them keep going. Stress affects it and that's why people get so damaged at a mental a physical way.

### **1.3 Chemical changes in our brain.**

When we are experiencing stress for any situation, external things that might happen or internal thoughts in our mind, there are chemical reactions or changes going on in our brains, the adrenal receive distress messages from the brain, these release adrenaline and cortisol so we start to develop a defensive state, serotonin is a neurotransmitter that fights the stress so the person can have a cooler head and think better, this neurotransmitter was developed in the prehistoric so the hunters could have more chances to survive, the serotonin is also more present in males because women used to be in the cave collecting food or just stay there, the reason why women are so intense is because of that.

When we are having a bad moment or a stressful situation or anything at all the brain works in different ways and release lots of hormones or anything chemical in our heads and bodies, making the body response in different ways like situations when the heart speed up

because of the influence of the hormones, there are many types of reactions depending of what is happening and the subject.

## **Chapter II**

## **Mental and physical changes caused by stress in teenagers**

### **2.1 Common Triggers of Teen Stress**

People usually underestimate the impact stress can have in the mental and physical health of a person, even more teenagers, because they think stress is just a normal thing a human being experiences and it is, but as we know everything has a limit, teens don't know when they are reaching the limit. There are many things that can trigger stress in people, but here are some of the common triggers of a young adult.

#### ***2.1.1 Academic stress.***

It goes from grades to test scores because this punctuation depends the possibilities for your college and future, there is also the pressure of pleasing the teachers and parents, fulfill the expectations that the school and people around you demands. Teens also worry about keeping up with their classmates and feel overwhelmed about the works they have to present.

#### ***2.1.2 Social stress.***

In the adolescence people concern a lot about what other people think about them, now days is worse with the social media because teens try to fit to a kind of model that only cares about how many followers and friends they have, if someone is different people bully them and make them feel like don't belong with them, they don't belong to the world, this actions can affect a lot in the self-esteem of the subject.

Romantic relationships are not easy and teenagers starts to realize the attraction to another person and wants to start a relationship, they usually end up being toxic and stressful.



### ***2.1.3 Family discord.***

Problems at home stresses everyone at the house, a teen is really affected because they are living the situation and they are not the problem and especially not the one to blame. Even though parents do not think their problems have an effect in their children, they have.

### ***2.1.4 World events.***

With everything that is happening in the world people are terrified of what can happen at schools or just out of the house so they are always wondering about the safety of them and their loved ones. It is a constant concern for people; because of this, the stress appears and overthink about everything that could happen.

### ***2.1.5 Traumatic events.***

Accident, deaths, sickness, or any physical abuse than can be traumatic causes stress to the subject and can make them at least 10% more violent. It can be one of the reasons why children become more abusive with their classmates or authorities, such things marks a kids heart and soul.

### ***2.1.6 Significant life changes.***

Life changes like new houses, starting at new schools/jobs, divorces can be as much stressful to adults as to teens, because normally they don't know how to handle the situation, then they get anxious when they start to think all the things that could happen, normally ending up imagining the worst scenarios.

## **2.2 How Stress Triggers Mental Illness in Young Adults.**

When someone reads the word depression gets frightened or impressed, but what they don't know is that depression and anxiety is common in teens, sometimes they don't show it or adults think they are just overreacting to something and don't take them seriously, approximately 30% of adolescents have one-episode depression, and about the 50% to 70% of them have episodes of anxiety, impulse control, and hyperactivity disorders. The effect of these types of problems on teenagers is far-reaching; at least 70% of adolescents in the juvenile justice system have different types of a mental health disorder. In the teenage stage, people experience isolation, rejection and more feelings at a high level, that's why teens are so vulnerable and corruptible.

A study from the Johns Hopkins University School of Medicine, published in the journal Science, help us understand mental illness in young adults and how it occurs. The experiment starts by applying stressful situations to young mice that are known to have genes for mental illness. "Having the genes for mental illness puts the mice at risk, but it is not enough to cause mental illness," says Akira Sawa, a psychiatry professor and director of the schizophrenia center at Johns Hopkins Medical Center in Baltimore and lead researcher on the study. "When you add stress to the equation, at an age when the mouse brain is most similar to the human adolescent brain, the mental illness is triggered."

The mouse shows reactions when it is isolated, by doing this the cortisol affects the levels of another chemical in the brain called dopamine, these kind of changes can be seen in schizophrenia, depression, and other mental disorders.

In the adolescence we go through a unique stage of development, at this point the brain is very sensitive and it is going through the process of forming its wiring network, so the adolescent

brain is more sensitive to the stress hormone cortisol, the part that is in charge of shutting down the stress response, called the prefrontal cortex, is less developed in teenagers, for this reason stress could be experienced for a much expanded time.

### **2.3 How stress affects your body.**

One of the natural reactions to life experiences is stress. Everyone's feels stressed every now and then, stress can even be beneficial to health, because it can help you face to potential serious situations, as the author referred previously the human body reacts to stress by releasing hormones that increase heart and respiratory rates and prepares muscles to respond to the situation.

#### ***2.3.1 Central nervous and endocrine systems.***

The central nervous system is in charge the quick reactions responses. The hypothalamus starts by telling the adrenal glands to release the stress hormones adrenaline and cortisol. These hormones rise the heartbeat and send blood rushing to the areas that need it most in an emergency, such as your muscles, heart, and other important organs.

When the supposed danger is gone, the hypothalamus should tell all systems to go back to normal. If the central nervous system fails to return to normal, or the stressor does not go away, the response will continue. Chronic stress can also be a factor of overeating or not eating enough, the use or abuse of alcohol or drugs and social isolation.

### ***2.3.2 Respiratory and cardiovascular systems.***

The stress hormones affect the respiratory and cardiovascular systems. Because of the stress response, the breathings go faster in an endeavor to quickly distribute oxygen-rich blood to the body. If the subject has any respiration problem, stress can make it worst.

Under the effects of stress, the heart pumps faster. Stress hormones causes the blood vessels to tighten and deviate more oxygen to the muscles so the person will have more strength to take action, raising your blood pressure. Because of chronic stress, the heart will work too hard for too long. When the blood pressure rises, there's a risk of having a stroke or a heart attack.

### ***2.3.3 Digestive system.***

Under stress the liver, generate extra glucose to give a boost of energy. In chronic stress, the body may not be able to keep up with the extra glucose surge. It could increase the risk of developing type 2 diabetes. Keeping in mind the consequences of the chronic stress, the idea of having precaution and go see a professional and a special diet is a good thought.

All the rush that stress causes can also upset the digestive system. The subject is more likely to have heartburn or acid reflux thanks to an increase in stomach acid. Stress does not cause ulcers, but it can increase the risk of them and cause existing ulcers to act up. It can also affect the way the food moves inside the human body, leading to diarrhea or constipation. It can also provoke nausea, vomiting, or stomach ache.



#### ***2.3.4 Muscular system.***

Because of stress, the muscles tense up to protect themselves from injuries they tend to release again once the person relaxes, but with the constant stress, the muscles may not get the chance to relax. Tight muscles cause headaches, back and shoulder pain, and body aches. There are ways to relax the muscles that should be done to get rid of the tension.

#### ***2.3.5 Sexuality and reproductive system.***

Stress is and strenuous task for the mind and body, so is perfectly normal to lose the desire if you're in constant stress. While short-term stress may cause more production of testosterone in males but this effect doesn't last much.

If the stress continues for a long period, the male testosterone may drop, so it can interfere with sperm production and cause erectile dysfunction or impotence. It can also raise the risk of infections in the prostate and testes. For women it can affect their menstrual period and make it irregular, heavier, or more painful or magnify the physical symptoms of menopause.

#### ***2.3.6 Immune system.***

Stress boost the immune system, which can be helpful for immediate situations. This simulation can aid avoid infections and heal wounds. However, over time, stress hormones will weaken your immune system and reduce the body's response to foreign invaders. People under chronic stress are more susceptible to viral illness like the flu and the common cold. Stress can increase the time it takes to recover from an injury or illness.

## **Chapter III**

### **Mechanisms of control in teenagers**

#### **3.1 Ways to manage stress.**

##### ***3.1.1 Exercises.***

There are different options people can do to reduce their stress levels like exercise, having a regular work out relaxes the mind and body, why does it happen? It happens because when a person is working out is improving their oxygen and blood flow, both of the changes affects directly the brain and it increases the production of endorphins, which are neurotransmitters that make us feel “happy” or “satisfied”. physical activity is a good option to apply when someone have a high level of stress and not just them, being physical active will help you in every condition, it is important to the human body and mind because its gives the same benefits of meditation. A good routine to exercise is three to five times a week for thirty minutes or one hour. Maybe just going for a walk, ride a bike, go jogging, etc, are easy physical work to do and very effective, it doesn't requires much time, it could entertain you from your problems.“Because you have somewhere to let out all of your problems without anyone judging you” (C. Gonzáles, interview, 28 August of 2018).

“The sport helps you to decrease stress for a simple reason, you disconnect from the world by exercise, because in the end you know that you will have a good result an example is football because every minute you play the adrenaline is increasing and you do not think about the problems outside of the court, you think simply of making a score” (I. Rosero, interview, 29 August of 2018).

### ***3.1.2 Relaxation.***

When people get stressed the muscles get tense, so relaxing the muscles is also a good way to fight the stress effect, to do these the person have the options of stretching, having a massage, taking a hot bath or shower and getting a good night's sleep. A great combination of relaxing the muscles is taking deep breaths, lowering the stress this way is much easier, for doing these the person has to be comfortable, close their eyes, imagine a peaceful place and start having slow deep breaths, for five to ten minutes. Slowing down is required, now-days the life is too busy that's why sometimes is good to take things a little bit more slow and go step by step to chill down. "Sleeping, eating, listening to music, dancing, chatting with friends" (C. Gonzáles, interview, 28 August of 2018).

### ***3.1.3 Healthy diet.***

There are more options or ways like eating well, having a balanced diet will make you feel better in general and control feelings, a diet should contain vegetables, fruits, whole grains and lean protein, it is important to not skip meals, not eating correctly increase stress, it also help your physical health and fitness. "Snacks, it hasn't helped because I have become fatter" (C. Gonzáles, interview, 28 August of 2018).

### ***3.1.4 Leisure time.***

Making time for hobbies will make you happier because you do something that you enjoy, little things count too, like reading, knitting, watching a movie, etc. One of the most important things a person should do is talk about their problems, they can talk with family members, friends, a therapist or they can even talk with themselves, it is called self-

talk, but for this to work the talk have to be about positive comments like” I can do this” or “you're doing great”. When we talk about teenagers, it’s recommended to have professional help, the adolescence is a very complicated stage of a person and they become stubborn and wreckless but there is when they need help and support. Most teenagers and people in general do not want to accept they need help or that they are in bad shape with all the problems going on, in this case it is kind of complicated because no anybody help someone who doesn’t want help.

The last two options or ways that the author is going to write about is, go easy on yourself and eliminate your triggers, when the author refers to go easy on yourself is to accept that things are never going to be perfect all the time, not everything can be controlled and about to eliminate the triggers is to identify what are the things and emotions that causes the most effects of stress in your life and eliminate them or give them a solution, if can't identify them, keep a journal and write every time you get anxious, with time you'll realize what are the things that are stressing you out. “Not being organized, leaving all your chores for last minute, caring too much about grades”

(C. Gonzáles, interview, 28 August of 2018).

## **CONCLUSIONS**



At the end of this monographic work, it is concluded that:

- Stress is a disease and can bring several consequences to the subject who is suffering from this disease, since the amount of psychological pressure is more than the one the subject could handle.
- The constant competition that the world is living is harming the society and specially the teens, since they live in a world where every mistake is saved and could be brought easily from the Internet.
- Acceptance is one of the most important things for a teenager, and that would explain why teens give so much importance to what is shown in their social media. Since they feel obligated to fit in a “perfect society”, teens normally will expose everybody in order to be accepted.
- There are different kinds of stress, since stress is not always originated from the same cause every time; some of them are: Academic Stress, caused by school-work; Social stress, caused by people and society’s judgment; Family discord, caused by personal problems within the family circle; World events, which could be political tensions affecting the country the subject is living currently in; Traumatic events, like near-death experiences or the loss of somebody; or Significant life changes, like moving to another country or changes schools.
- Stress affects every part of your body, from the central nervous system to the immune system, and that would explain why stressed people are always worrying too much about unimportant things or why they get sick frequently. Other aspects that are affected are the digestive system, by making you feel empty or completely full all the time; the muscular system, by slowing weakening muscles and making it easier for somebody to injure; and the reproductive system, by diminishing testosterone levels.



## RECOMMENDATIONS

At the end of this work, it is recommended that:

- Before judging somebody by how they look or what they post on their social media, realize that not every person is the same and any negative comment you could say about somebody could really harm that individual.
- People should never assume that somebody is fine, since stressed people most of the times keep their struggle to themselves. However, if changes in the individual are clearly noticeable, professional help should be sought immediately.
- The best way to help stressed people is not by keeping their secret, but talking to them or taking them to a specialist, since any wrong step could lead the person into the wrong path and that could end up putting pressure not only on the individual but also on the friend.
- Whenever people are feeling stress, they need to remember that there are several healthy ways to reduce stress, and doing them correctly could help with their problems.

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The monographic work from Sahide Polo is concluded.

The monography can be read from the following QR code

Thank you.