

# Impact of Stress on day-to-day functioning

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## ABSTRACT

Any intrinsic or extrinsic stimulus that evokes a biological response is known as stress. Stress responses are the compensating reactions to various pressures. Stress may cause the body to go through a variety of physiological changes, from changes in homeostasis to life-threatening consequences and even death, depending on the nature, timing, and degree of the given stimulus. The pathophysiological consequences of illness frequently result from stress, and those who are exposed to stress—for example, those who work in or live in stressful environments—have a higher risk of developing a variety of diseases. Many illnesses and pathological states can be triggered or made worse by stress. In this study, we evaluated some of the most significant impacts of stress on the human body's main physiological systems.

**Keywords:** stress, physiology, homeostasis, impact.

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## INTRODUCTION

Sometimes stress can be a positive force, motivating you to perform well at your piano recital or job interview. But frequently, it's a bad force, as when you're trapped in traffic. If you don't do something about persistent stress, it can turn into a chronic condition.

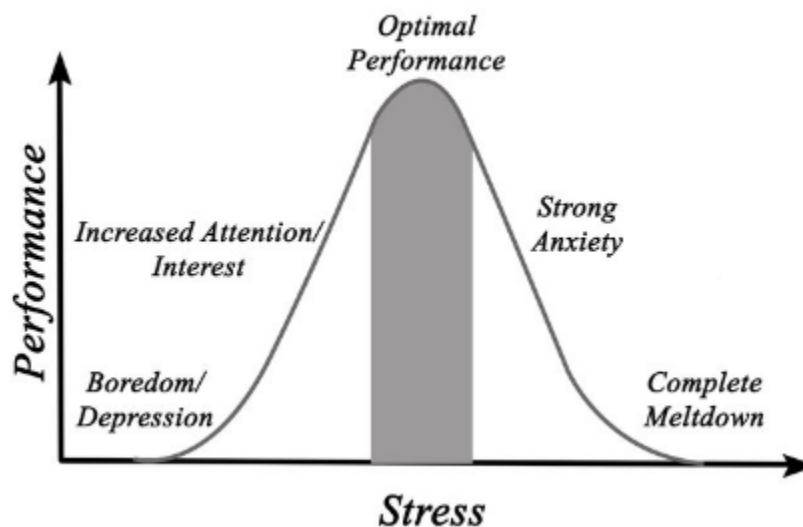
You may have had sweaty hands on a first date or felt your heart race while watching a terrifying movie, in which case you are aware that stress may affect both your mind and body. Our earliest ancestors evolved this natural reaction to defend themselves against predators and other dangers. When faced with danger, the body goes into overdrive, releasing stress chemicals like adrenaline and cortisol that speed up your heartbeat, raise your blood pressure, give you more energy, and get you ready to handle the situation.

You're unlikely to experience the threat of being devoured today. However, it's likely that you deal with daily struggles like meeting deadlines, making ends meet, and coordinating childcare that cause your body to respond in a similar manner. The "fight or flight" reaction, your body's natural warning mechanism, may as a result be permanently activated. And that might have a negative impact on your health.

COVID-19 invaded our globe towards the end of 2019 and has since attained pandemic status, endangering the health of untold numbers of people. An outbreak of pneumonia with an unknown cause has been going on since December 2019, and it was first noticed in Wuhan, Hubei Province, China (Wang et al. 2020). The World Health Organization determined a new coronavirus, SARS-CoV-2, as the cause of the pandemic in China and other regions of the world after the epidemic (WHO). Globally, Covid-19 has impacted more than 4.5 million individuals (WHO, 2020). Due of the death rate of COVID-19 and accompanying issues including economic unpredictability, unemployment, stress, anxiety, and insecurity, this new pandemic ailment is frightening and distressing for everyone. It's normal for individuals to have a variety of ideas, sentiments, and reactions as the COVID-19 epidemic and its extensive effects continue to play out internationally and in our neighbourhood. Thus, the primary goal of this study is to understand the effects of student stress and the need to manage it in order to ensure successful learning. We must recognise that a pandemic is more than simply a medical problem; it also has social, emotional, and psychological effects on the people. The notion of wearing masks and remaining alone is linked to mental illnesses such as anxiety, panic attacks, insomnia, tension, and others. Numerous students had psychological issues as a result of the pandemic epidemic, which are hurting their overall personalities as well as their academic performance (WHO, 2020) [1].

In an effort to stem the spread, nations throughout the world imposed stringent measures for their residents. The nation closed public gathering places and instituted travel bans while converting its physical education system to online instruction. Quarantine is the most demanding. According to the Centers for Disease Control and Prevention (CDC), quarantine is the process of isolating and limiting the mobility of individuals who have been exposed to a contagious disease in order to monitor their progress toward illness (CDC, Report, 2020). Everyone can suffer considerable mental strain when in lockdown, often known as quarantine. Specifically, three aspects of mental health—autonomy, competence, and connectedness—are impacted by quarantine. People experience isolation as a result of being cut off from their friends and their everyday activities. Samantha K. Brooks' latest study on "the psychological impact of quarantine and ways to mitigate it" revealed how COVID-19 is influencing those under lockdown. Fear, sorrow, numbness, sleeplessness, bewilderment, rage, post-traumatic stress disorder (PTSD) symptoms, depressive symptoms, poor mood, stress, emotional disturbance, impatience, and emotional weariness were the most common emotions people reported. Evidence suggests that these repercussions may possibly have longer-term effects (Brooks et al, 2020). Every issue is being overtaken by stress [2].

Stress is the body's nonspecific reaction to any demand, according to Hans Selye (Fink, 2009). At some point in their lives, everyone is under stress. Stress as a scientific notion "suffers the affliction of being too widely known and too poorly understood," according to Hans Selye, a scientist who popularised the idea. Despite being one of the most widespread human feelings, stress is surprisingly hard to quantify. According to scientists, stress is a force or an occurrence that compromises regular stability, balance, or performance. The example that follows could help you better comprehend stress. A suspension bridge's equilibrium may change under the strain of a high wind, causing the bridge to swing from side to side [3]. As they drive across the bridge, most people don't even feel the little shaking. Everyone can see how the bridge is swaying as the wind picks up. This swaying, though it may cause some people to feel uneasy or worried, is essentially how the bridge manages stress. The bridge would be more fragile and susceptible to destruction from wind stress if it did not wobble at all. The bridge may actually collapse if the wind picked up enough to the point that it surpassed the bridge's design limits. Life's stress is like that wind. Despite being frequently present, stress generally goes unseen. Stress may often make individuals feel unsteady or afraid, as if they were in danger of collapsing just like that bridge. Most of the time, this anxiety is unfounded, and people's foundations are considerably more solid than they believe. It is vital to understand that there are times when one is actually in danger of collapsing. But in most cases, the true danger posed by stress is that it will, over time, harm people's health and reduce their quality of life. Since stress no longer just affects adults, but now affects kids of all ages, it has become an essential component of life and the body's response to a challenge [4].



**Fig. 1: Relation between Stress and Performance**

COVID 19 acts as a catalyst in increasing student's stress. Undoubtedly, stress is now the main factor cited as a barrier to academic success. Since the appropriate sort of stress may sharpen our minds and reflexes and motivate us to change and grow, some degrees of stress can actually be beneficial for us. It is your fight-or-flight reaction to difficulties you encounter in life. Your heart rate and blood circulation will likely increase as a result of this natural reaction, helping you to better handle these difficulties. Everyone experiences stress at some point in their life, regardless of age, gender, or circumstance, however it can appear differently for each person. Stress may, however, become a nuisance or even a health danger when it lasts for a long time [5].

## **LITERATURE REVIEW**

In their study, Reddy et al. (2018) found that there are differences in students' levels of stress according to their stream. Stress management is crucial on a personal, societal, and institutional level. It has been discovered that stress management techniques including feedback, yoga, life skills training, mindfulness, meditation, and psychotherapy are effective. The key to managing stress is to pinpoint its primary cause. Professionals can provide customised stress management plans. The holistic wellbeing of the students is crucial for both them as individuals and the institution. In his study, Dimitrov (2017) asserted that stress may be reduced by ensuring that students place the highest priority on their welfare. Some of the areas to concentrate on include food, exercise, job, and leisure. Additionally, he came to the conclusion that the educational system places too much emphasis on academic achievement and not enough on kids' overall development. As the emphasis is primarily on the academics and not the mental growth of a go-getter, students are typically conditioned in a way that makes them scared to take on impending problems. The selection of educational media is limited. For pupils from rural backgrounds, the fact that English is the sole choice is a barrier [6].

Employability-focused courses are not commonly offered. For better jobs, recent grads need to strengthen their communication skills more. The relationship between student mental health and academic stress was identified by Subramani and Kadhiravan (2017). He agreed that students are constrained by the academic system and that there is a link between academic stress and mental health. Additionally, there is not enough assistance from parents and schools in terms of advice, which demoralises pupils who are subjected to excessive pressure from teachers and parents to get higher grades [7].

When students contribute positively to the academic forums, they are in good mental health. They also suggested that because private school students receive more homework and other academic-related responsibilities than children at government schools, they are under more pressure. There was a noticeable disparity between the mental health of children in private and public schools. He said that government school pupils, who come from a low socioeconomic background and lack of experience, receive less caring and exposure than their private school counterparts. This is one of the factors contributing to the rise in stress. In their study, Sharma et al. (2016) noted the adoption of a number of techniques to reduce stress. One physical activity performed each day might help with the stress issue. Additionally, one might start using different time management strategies and engage in extracurricular activities that are advantageous for students. Additionally, it was advised that institutions should have a relaxing atmosphere to reduce stress. Changes in the way teachers deliver their lessons and the availability of mentors may give the classroom environment a new lease on life. According to study conducted by Prabu (2015) [8] on students in higher education, male students are under more stress than female students. Academic stress is higher for urban students than for rural students. The stress levels of students in public schools are lower than those in private schools. Students in the Science stream are under more pressure than those in the Arts stream. Deb et al. (2014) conducted research on 400 male students in grades 10 and 12 from five private secondary schools in Kolkata. High levels of academic stress and anxiety were discovered in 35% and 37% of pupils, respectively. According to certain studies, students with lower grades experience more stress than those with higher marks. Additionally, it was shown that pupils who participated in extracurricular activities were more stressed than those who did not. Kaur (2014) agreed that the stress of school has an impact on teens' mental health. When compared to males, girls experiencing academic stress were shown to have poorer mental health. According to the study, parents occasionally place pressure and stress on their children, which worsens their mental health. In his research, Bataineh (2013) measured the academic pressures that university students face. The analysis' findings indicated that a disproportionate academic load, a lack of study time owing to the depth of the course material, high family expectations, and poor motivation levels are some of the causes of stress. Stress is mostly caused by a fear of failing. Students from various specialities did not significantly differ from one another. Khan and Kausar (2013) came to the conclusion that stress had a detrimental influence on academic performance even though there was no discernible gender difference [7,8].

The distinction between junior and senior pupils was clear. Stress undoubtedly has an impact on time management and the capacity for effective learning. Regular study time is crucial since it lowers academic strain and aids in goal achievement. According to Busari (2012), stress among secondary school pupils was connected to depression and had an impact on academic performance. Consideration should be given to teaching life skills, introducing preventative measures, and using other therapeutic approaches. According to Nandamuri and Gowthami's (2011) study of stress in students pursuing professional studies, the curriculum and instruction requirements were the main cause of stress in 86 percent of cases, followed by placement-related problems in 63 percent of cases, and problems with assessments and teamwork in 41 percent and 24 percent of cases, respectively. The study cited twelve subissues relating to curriculum and teaching as well as several microissues that were found as contributing to stress. Once the underlying problems for each metric were found, the academic administrators had a clearer picture of where to start their efforts to lessen the severity of academic stress. Stress

has grown in importance as a subject of discussion in academic circles, claims Agolla (2009). Numerous philosophers have conducted extensive research on stress and come to the conclusion that this subject requires much more consideration. In their 2003 study on predicted stress among final-year undergraduate students, Radcliff and Lester noted that the causes for the stress to build up were due to class assignments, a lack of adequate guidance, social pressure to mix, and pressure to get affiliated. According to McKean et al. (2000), undergraduate students feel more stress throughout predictable points in each semester. Stress can accumulate as a result of academic commitments, financial constraints, and a lack of time management abilities. Overstress can have a negative impact on health, emotional attitude, and academic achievement. Following that, it becomes crucial for undergraduate students to develop coping mechanisms for difficult circumstances [8–9].

### **SYMPTOMS OF VARIOUS TYPES OF STRESS**

#### **Body Stress Symptoms**

Stress can also affect your mood and general behavior, but stress-related conditions can affect your body in a number of areas. Through chemicals generated as part of the body's stress reaction, stress can reduce the immune system's responses, which can lead to a variety of various problems.

The following are a few of the most typical effects of stress on the body [10]:

- Tiredness
- problems or insomnia sleeping
- Headaches
- chest pain
- muscle pain
- decreased libido (sex desire) and altered appetite

#### **Comportment Stress Symptoms**

Even if someone informs you, you might not be aware of it while it's occurring because stress might lead you to act differently than you typically would. Sometimes this can be laced with tiredness, while other times the exhaustion itself is brought on by stress.

Some of the most typical habits that might alter are:

- More visibly angry
- using drink, drugs, or cigarettes as crutches to deal with stress
- Eating too much or too little (under eating is more common)
- Less social engagement and more disputes
- reduced exercise

#### **Depression Stress Symptoms**

Although other people may not always notice it, your attitude is equally as essential as your actions and physical appearance. Stress may lead you to feel angry or sad at times when you wouldn't ordinarily experience such emotions, and it can seriously impair your ability to concentrate for those who have a lot of obligations to attend to.

People with anxiety issues frequently see stress as a trigger, and the two factors can combine to form a vicious cycle where each worsens the other. People who are under a lot of stress may have a speedier onset of annoyance or irritability.

#### **Typical Health Issues**

At its worst, stress may cause conditions that can drastically affect one's life, like:

- elevated blood pressure
- Headaches
- gastrointestinal problems such as stomach ulcers
- chest pain
- long-term insomnia
- Diabetes or Obesity

#### **Stress Reduction**

Although avoiding significant stress is easier said than done, there are several strategies you might consider. From person to

person, these differ.

Whatever makes you more relaxed may be effective since relaxing is the key. Regular exercise is always beneficial, and some individuals include meditation into yoga or pilates workouts. Some people choose to unwind by reading a book or watching their favourite television show, while others go outside and enjoy nature.

The only thing that's crucial in this situation is getting rid of as many of the unneeded stressors on your body as you can. You may determine the high-stress areas of your life that you can afford to cut out even if certain stressful situations cannot be avoided. This may involve interactions with volatile friends or family members for some people, while it may be checking one's bank account or watching TV shortly before night for others. Be as honest with yourself as you can because only you can recognise these places for yourself [11].

### **EFFECTS OF STRESS ON HUMAN BODY**

You're sitting in traffic, late for an important meeting, watching the minutes tick away. Send in the stress chemicals, your brain's little control centre, hypothalamus chooses to command. The "fight or flight" reaction in your body is brought on by these stress chemicals. Your breathing quickens, your muscles tense up, and your heartbeat quickens. By enabling you to respond swiftly in an emergency, this reaction was created to safeguard your body. However, if the stress reaction is continually triggered throughout the day, it might seriously jeopardise your health.

Stress is a typical physical and psychological response to experiences throughout life. Everybody occasionally displays signs of stress. Stress may be brought on by anything, from routine obligations like job and family to major life events like a new illness, war, or the loss of a loved one. Stress can be good for your health in conditions that are urgent and short-term. It can assist you in handling potentially dangerous circumstances. Stress causes your body to release hormones that quicken your heartbeat and breathing as well as prepare your muscles for action.

Your health may suffer if your stress reaction doesn't shut down and your stress levels remain high for a longer period of time than is essential for survival. Numerous symptoms and general well-being issues might result from chronic stress [12].

Among the signs of ongoing stress are:

- irritability • anxiety • depression
- headaches • insomnia

#### **Endocrine and central nerve systems**

Your "fight or flight" reaction is controlled by your central nervous system (CNS). The adrenal glands' production of the stress chemicals cortisol and adrenaline is initiated by the hypothalamus in your brain. These hormones speed up your heartbeat and direct blood to your muscles, heart, and other vital organs—the parts that require it most in an emergency.

The hypothalamus should signal all systems to return to normal after the perceived fear has subsided. The response will persist if the CNS is unable to get back to normal or if the stressor doesn't disappear.

Additionally, chronic stress contributes to behaviours like bingeing or overeating, abusing alcohol or other drugs, and social disengagement.

#### **Cardiovascular and respiratory systems**

Your cardiovascular and respiratory systems are impacted by stress hormones. You breathe more quickly while under stress in an effort to immediately deliver oxygen-rich blood to your body. Stress can exacerbate respiratory issues, such as asthma or emphysema, if you already have them.

Your heart also beats more quickly while under stress. Your blood vessels narrow as a result of stress hormones, which increases the amount of oxygen delivered to your muscles and gives you greater power. But doing this also makes you more hypertensive.

Therefore, sustained or ongoing stress will cause your heart to beat excessively quickly and forcefully. The likelihood of experiencing a heart attack or stroke increases as blood pressure raises.

#### **Intestinal system**

Your liver creates more blood sugar (glucose) while you are under stress to give you an energy boost. Your body might not

be able to cope with this extra glucose spike if you're under constant stress. Your risk of type 2 diabetes may rise if you experience chronic stress.

Your digestive system may also get affected by the surge of hormones, fast breathing, and elevated heart rate. An rise in stomach acid makes heartburn or acid reflux more likely to occur. Although a bacteria called *H. pylori* frequently causes ulcers, stress might raise your chance of developing them and make pre-existing ulcers worse. Stress can also alter how food passes through your body, causing constipation or diarrhoea. Additionally, you could feel queasy, throw up, or have stomach pain [13].

### **Immune system**

When you're anxious, your muscles contract up to protect themselves from harm. When you relax, they usually start to release again, but if you're always stressed out, your muscles might not get a chance to unwind. Back, shoulder, and general discomfort are all symptoms of tight muscles. This can eventually lead to a harmful cycle where you stop exercising and start using painkillers.

### **The reproductive system and sexuality**

Stress wears both the body and the mind out. When you're under continual stress, losing your desire is not uncommon. Men may create higher testosterone while under short-term stress, although this impact is transient.

A man's testosterone levels may start to decline if stress is endured for an extended period of time. This may disrupt sperm production and result in impotence or erectile dysfunction. The risk of infection for male reproductive organs including the prostate and testes may also rise with ongoing stress.

Stress can have an impact on a woman's menstrual cycle. It may cause periods to become more painful, heavier, or irregular. Additionally, long-term stress might make menopause's physical symptoms worse.

### **Mechanism of defence**

Stress boosts the immune system, which is beneficial in urgent situations. You can heal wounds and prevent infections with the aid of this stimulation. However, over time, stress hormones will deteriorate your immune system and lessen your body's ability to fight off intruders from abroad. People who experience prolonged stress are more prone to infections and viral diseases like the flu and the common cold. Additionally, stress might lengthen the time it takes for you to recover from a disease or injury [14].

## **CONCLUSION**

The conclusion that can be drawn is that job overload, poor working environments, such as crowded working conditions and noise, are the main sources of workplace stress. Our investigation also led us to the conclusion that in a global manufacturing organisation where employees were more concerned with internal than external stressors, the environmental stressors were not particularly significant. Stress variables are not necessarily constant, dependable, and consistent across a range of professions. Steps for stress management vary from environment to environment, work to task, or scenario to situation. We further expand on our results about how workers cope with stress and the actions they take to seek out their immediate family, friends, and families for assistance and guidance. Sharing thoughts, sentiments, and emotions allows people to relax and enjoy both their personal and professional lives. In addition to providing alternative perspectives on how to approach a problem, being able to express sentiments with peers and families also makes for a friendly workplace.

These strategies are mostly used by employees when they are under stress. However, stress reduction depends on how well people manage their time and how well managers create a stress-free work environment. We also draw the conclusion that stress is mostly self-controllable, and those employees are capable of managing their emotions and tension. For the remainder, they may make use of the management's facilities. Finally, we'd want to draw the conclusion that, in order to experience less stress, sharing ideas about aspiration level is essential. When employees don't know anything about their teammates or close coworkers who work in a team, their stress levels may be influenced. If they don't have the same amount of ambition, it makes them fearful. Since this will affect the stress level and may aid in stress reduction, it is important that you get to know each other better and share similar values and aspirations.

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