

Review Article

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Unseen Burden: How Human Emotion Shapes Mortality Rates

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ABSTRACT

The goal this comprehensive review is to examine the adverse effects of emotions, especially depression, anxiety, and overthinking, on human mortality. We investigate complex physiological and psychological pathways by which emotional states can affect health, from cardiovascular disease to impaired immune function. We link current scientific knowledge to provide an alternative way of conceptualizing how mental health impacts longevity and health in everyone. Our objective is to provide meaningful information for scientific and non-scientific readers alike, and to demonstrate the need for addressing pathogens of emotional well-being. This review provides insight into how pathways from mortality can be significantly altered based on how we cope with acute and chronic stress, demonstrating the interdependence of life sciences to combat a national and global health crisis.

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Received: September 15, 2025; Accepted: September 20, 2025; Published: September 25, 2025

Keywords: Human Emotion, Mortality, Depression, Anxiety, Overthinking

Introduction

In a time of increasing technology and global interconnectedness, the human lived experience still revolves around how we feel. While we often view emotions as fleeting states of being, they have a far-reaching, quantifiable influence on our physical health and longevity in ways we tend to underestimate. This review article will take an in-depth look into the relationship between human emotional states, specifically depression, anxiety, and overthinking, and their serious and frequently disregarded effects on mortality rates [1]. Depression, anxiety, and overthinking are not merely psychological discomforts; they are recognized, more so now than ever, as important public health issues that have a direct impact on our physiology. This article will provide a current scientific outlook and more nuanced discussion of inner emotional states, and their ability to influence outer health outcomes [2]. We seek to connect the dots between complicated science and knowledge, thereby making it accessible to audiences from all walks of life, including non-scientists. In our efforts to explain the connections between chronic emotional distress and innumerable health problems, we hope to foster a clearer understanding of the urgency to address mental wellness holistically and encourage a culture of emotional wellness as a foundation for living longer, healthier lives [3].

The Physiology of Emotion and Stress

In order to consider how emotions may impact mortality, it is important first to understand the physiological basis of emotional responses, particularly in regard to stress. When people experience emotions, such as fear, anger, or chronic sadness, their body engages many systems designed to help them survive [4]. These

systems interact in a complex manner, and there are primarily three systems: the nervous system, the endocrine system, and the immune system. When an individual perceives a threat, the conventional activation occurs in the sympathetic nervous system (part of the autonomic nervous system). As a result, the body experiences the 'fight or flight' response. Due to the immediate emotional response to stress, a number of changes occur in the individual's physiology [5]. The heart rate increases (or beats) faster, blood pressure increases, and breathing increases in frequency. In animals, energy is redirected so that non-essential bodily systems (e.g., digestion, immune system) stop, creating more energy for the urgent body needs. Acute stress responses are beneficial for short bursts; however, chronic stress is harmful. This is driven by the Hypothalamus-Pituitary-Adrenal (HPA) axis. Located at the base of the brain, the hypothalamus is very small [6]. The stress reaction starts in the hypothalamus, where CRH is released. CRH tells the pituitary gland to release Adrenocorticotrophic Hormone (ACTH), which in turn prompts the adrenal glands situated on top of our kidneys to make the body's 'stress hormones' like cortisol. Cortisol is an essential biochemical that in kept in balance, and it helps regulate characteristics all over, like metabolism, immunity and inflammation. While the body needs cortisol to help maintain homeostasis, chronic elevation of cortisol due to continual chronic emotional distress can lead to an assorted and non-exhaustive array of health problems. For example, chronic elevations of cortisol can result in immune dysfunction, which increases the risk of being infected by bacteria and viruses [7]. Chronic stress can also cause chronic inflammation, which is widely regarded as a known risk factor for several chronic conditions, including, but not limited to, cardiovascular disease, diabetes, and some cancers [8].

In addition to the HPA axis, the autonomic nervous system (ANS) also plays a significant role. The ANS contains two branches,

the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS). The SNS gets the body ready for action, while the PNS gets the body back to 'rest and digest' in order to return the body to a calmer and recovery state. A balance of SNS and PNS is needed to maintain a state of well-being [9]. Chronic emotional distress or stress response (as with depression or anxiety) can shift this balance toward an over-activated SNS and slowed down PNS. Prolonged periods of hypo-arousal in the PNS and hyper-arousal in the SNS can eventually put an overwhelming strain on the cardiovascular system. This will likely be related to increased blood pressure and could lead to an increased risk of cardiovascular injury. Aside from related cardiovascular impairment, the body's continued arousal could become the perceived normal state of affairs and result in restless sleep or trouble returning to proper physiological homeostasis [10]. A person diagnosed with high SNS activity may also have hyperarousal through the night regardless of time, even in sleep! So, in a very real sense emotional distress can produce long-term physiological stress consequences that can lead to declining emotional states and declining physical health [11]. (Figure 1).

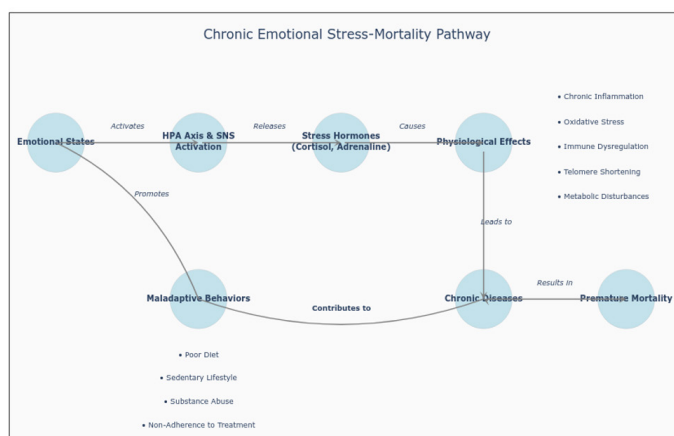


Figure 1: Chronic Emotional Stress and Premature Mortality

Illustrates how chronic depression, anxiety, and overthinking trigger physiological and behavioral pathways that elevate risks of chronic diseases and accelerate aging.

Depression and its Link to Mortality

Depression is a common mental health disorder that affects millions of people around the world. It is important to understand that depression is much more than simply a sad feeling. Depression is a complicated condition characterized by persistent low mood, a loss of pleasure or interest in many things, changes to appetite or sleep, constant fatigue or lack of energy, feelings of worthlessness or guilt, inability to concentrate, or recurring thoughts of death or suicide [12]. Depression is not just a mental thing; it is associated with a range of potential physical health issues and can be linked to premature mortality. Although depression more than likely increases the risk of premature death by suicide, premature mortality can also be caused by several physical health conditions and risks that are associated with or risk factors for depression [13]. One of the biggest risks of premature mortality associated with depression is cardiovascular disease (CVD). A range of studies have shown that depression puts you at a higher risk of developing several types of CVD that include heart attacks, strokes, and heart failure. The mechanisms of this relationship are complex. Continuous activation of the stress response system, as described above, necessitates sustained increases in cortisol levels and other stress hormones, which can be damaging to blood vessels and lead to atherosclerosis (the hardening of blood

vessels) [14]. Depression is also associated with higher risky lifestyle behaviors (low-quality diet, low activity level, smoking, and heavy alcohol use)—all involve well-established risk factors for CVD. A person who is depressed is also likely to stop taking medications for any of their other medical conditions, which will introduce even more risk [15].

In addition to CVD, depression has been linked to breach increased mortality from other chronic diseases. Studies indicate a significantly positive association between depression and higher risk of developing type 2 diabetes, and in diabetes, depressions can lead to worsened glycemic control and increased complications [16]. (Figure 2)

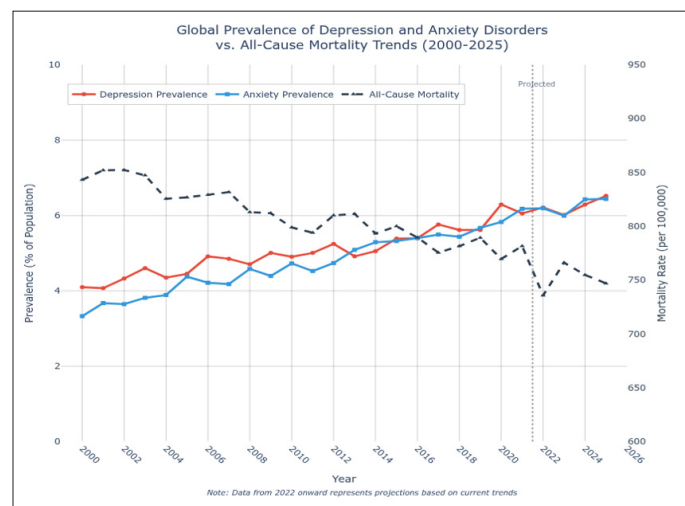


Figure 2: Global Mental Health and Mortality Trends

A dual-axis chart showing the rising global prevalence of depression and anxiety alongside mortality trends, highlighting the public health challenge posed by mental health disorders.

Anxiety and its Impact on Health and Mortality

Anxiety is described as a feeling of worry, nervousness, or unease. Usually, this relates to something with an uncertain outcome or an event that has not yet occurred. Anxiety is an expected human emotion; when anxiety becomes excessive, continuous, persistent, and results in impairment of daily living, they it can be represented as an anxiety disorder. Generalized anxiety disorder, panic disorder, social anxiety disorder and various phobias are some of the most frequently reported mental health illnesses experienced globally [17]. These anxiety related illnesses often labeled as being less serious than depression; however, chronic anxiety can cause significant negative consequences to our physical health and may even contribute to increased mortality risk. Chronic anxiety affects health in different ways, one of which is through its sustained activation of the sympathetic nervous system, which is as we discussed previously, a state of ongoing physiological arousal, evidenced by increased heart rate, blood pressure, and muscle tension [18]. Over time, this chronic stress response can wear and tear the cardiovascular system and the risk of having hypertension, coronary artery disease, and other cardiovascular events will increase. Just as the chronic release of cortisol and other stress hormones from the hypothalamic-pituitary-adrenal (HPA) axis can contribute to systemic inflammation that can impair blood vessels and lead to new atherosclerotic development, individuals with anxiety also present sleep disturbances, including insomnia, that can impact cardiovascular strain and delay repair and recovery [19].

In addition to cardiovascular health, long term anxiety can have a detrimental effect on other body systems as well. The gastrointestinal system is another way the body can respond to anxiety, with a sizeable number of the population experiencing irritable bowel syndrome (IBS), nausea, and/or indigestion due to generalized anxiety. This happens in part due to the powerful connection between the brain and the gut; emotional disturbances can also impact gut motility and sensitivity [20].

Overthinking and its Health Implications

Overthinking is usually presented in the forms of repetitiveness, excessive worry, and/or ruminating to the point of dysfunction. Overthinking is a common cognitive pattern and although not a proper psychiatric diagnosis, like depression or anxiety, it is often a significant element of them; it can also independently impair health outcomes. Overthinking occurs when your mind spins into a loop, causing you to replay the past, contemplate riskier future scenarios, and essentially get stuck in the mind without engaging in any actionable solutions. Even though any mental energy may seem harmless, it actually creates a persistent physiological stress that could contribute to more significant comorbidity (and thus mortality) [21]. Overthinking involves the brains and body remaining continuously alert in a state akin to the chronic stress response seen in anxiety. It involved the brain engaging on a constant basis, especially when the thinking is associated with possible adverse or uncertain outcomes; when this happens, we don't just think but we provoke the release of stress hormones--cortisol and adrenaline. As I have noted before, continuous cortisol and/or chronic elevation of these hormones causes chronic inflammation, oxidative stress, and immune system dysfunction. This physiological strain on the individual can be reflected by a number of different issues, including digestive issues, sleep issues, and chronic exhaustion. Overthinking individuals may have issues falling asleep or staying asleep. This can lead to sleep deprivation, and sleep deprivation is a risk factor in many health outcomes, including cardiovascular disease, diabetes, and obesity [22]. Moreover, overthinking can lead to a state of mental exhaustion, impairing cognitive functions such as decision-making, problem-solving, and concentration. This cognitive overload can spill over into daily life, affecting work performance, relationships, and overall quality of life. The constant internal monologue can also lead to social withdrawal, as individuals may feel overwhelmed or preoccupied, making it difficult to engage with others. This social isolation, in turn, can exacerbate feelings of loneliness and depression, creating a self-perpetuating cycle of negative emotional and physical health outcomes [23].

Overthinking has further implications on behavioral changes that may indirectly influence mortality. When individuals engage in overthinking, they may not participate in healthy behaviors as means of coping like movement, mindfulness, social supports, and may instead resort to unhealthy and maladaptive behaviors (such as emotional eating, substance use, and procrastination) that perpetuate health consequences. Overthinking, with chronic stress, can also lead to health behaviors, such as unhealthy food craving, weight gain, and metabolic disorders. Inability to detach from negative thinking may subsequently dissuade engagement with medical treatment for pre-disposed conditions because the individual is overwhelmed, and/or lacks efficacy to treatment engagement [24].

The Cumulative Impact on Mortality: A Holistic View

The previous chapters have provided insight into how depression, anxiety, and rumination can have unwanted consequences for health, when viewed in isolation. However, the real threat to mortality is the interactions of each of these emotional states

individually; rarely does a person experience any one of these manifestations of stress in isolation from the others; people often have several of these states simultaneously; and the interconnectedness of depression, anxiety, and rumination creates the potential for combined effects of interacting physiological and psychological consequences that significantly increase risk for premature death. This section looks at the combined effects, demonstrating how the emotional burdens are interrelated; they increase the aging process, make chronic diseases more likely, and shorten life span. Continual feelings of emotional distress due to depression, anxiety, or continual rumination holds the body in a consistent state of physiological arousal. The result of prolonged activation of a draft sympathetic nervous system, coupled with dysregulation of the HPA axis, leads to allostatic load. Allostasis describes the process whereby the organism achieves stability through change, as a response to stressors. Allostatic load can be understood, then, as the cumulative toll that arises from lengthened and/or repeated exposures to stress. High levels of allostatic load are reliable predictors of morbidity and mortality and embody a cascade of biological markers such as elevated resting blood pressure, increased levels of cortisol, heightened values of inflammatory markers (e.g. C-reactive proteins) and insulin resistance. The ongoing work of responding to emotional stress ultimately drains the body of reserves, diminishing its resiliency to other stressors such as infections, injuries, and the natural process of aging [25].

One of the most nefarious ways chronic emotional stresses may affect mortality is by hastening cellular aging. Work in the area of psychoneuroimmunology has found that chronic stress and psychological distress causes telomere shortening. Telomeres are protective caps at the ends of chromosomes that protect genetic information as cells divide. As cells divide, telomeres shorten naturally, and when telomeres are critically short, they are associated with cellular senescence (aging) and greater risk of age-related disease, such as cardiovascular disease, cancer, and neurodegenerative disease. This means that individuals experiencing chronic depression, chronic anxiety, or chronic rumination may be biologically older than their chronological age will suggest making them more likely to develop age-related illness earlier, and thereby face premature death [26]. (Figure 3)

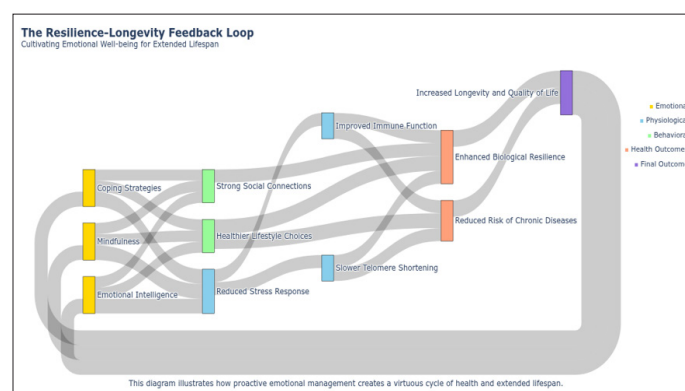


Figure 3: Resilience-Longevity Feedback Loop

A cyclical diagram demonstrating how emotional well-being, mindfulness, and coping strategies can collectively reduce stress, enhance resilience, improve immune system function, and increase longevity by encouraging healthier lifestyle choices, balanced routines, and sustainable habits that support both mental and physical health over time.

A Voice of Hope: Insights from the Field

To move beyond statistical data, it is essential to understand the human experiences that these numbers represent. For this paper, I had the privilege of conducting an interview with a young, active volunteer from Assam, India. Her work is deeply embedded in her community, where she organizes cultural festivals, provides educational support to students, and offers financial and strategic guidance to local families. She also extends her support to people with disabilities and those experiencing homelessness, providing financial aid, emotional support, and shelter whenever possible. Her firsthand account offers a powerful, real-world perspective on the emotional challenges prevalent in her community and the profound impact of social connection.

When I asked about the emotional struggles she commonly witnesses, her insights were both direct and insightful. “A heavy weight is felt by many, especially the students,” she explained. “It’s a combination of the pressure to succeed, a fear of the future, and at times, a deep loneliness, even when they are surrounded by people. They tend to overthink every small thing until it becomes a huge burden.”

She also shed light on the psychological toll of financial instability. “I see people who are struggling to afford their basic needs,” she continued. “For them, the worry is not about the distant future, but about today. This constant stress leaves them exhausted, not just physically, but in their spirits. It makes them feel trapped”.

Her words vividly illustrate the concepts of paralyzing overthinking and the all-consuming nature of financial anxiety. However, her work is a testament to the power of human connection in counteracting these negative forces.

“When we organize a cultural fest or a small community gathering, it’s about more than just the event itself,” she told me. “It’s about creating a space where people can forget their worries for a little while. They laugh, share food, and help each other. In those moments, you can see the change in their faces. They are no longer just a student or a person with problems; they become part of something bigger.”



Figure 4: A Portrait of Compassion in Action

This powerful testimony highlights a crucial truth: while negative emotions can be destructive, positive social engagement and altruism can serve as powerful antidotes. Her work demonstrates that fostering a sense of belonging and purpose can be a life-affirming, and potentially life-saving, intervention. As she concluded, “Helping others, even in small ways, gives them a sense of purpose. It reminds them that they matter and that they can make a difference. The blessing you receive from helping someone... that is a feeling no money can buy. It gives you a reason to keep going.”

A dedicated volunteer whose work in her community provides a powerful example of how social connection and altruism can build resilience and hope.

Conclusion

The complex relationship between human emotion and death is a fascinating area of exploration that deserves greater attention from an interdisciplinary perspective. As discussed in this review article, emotional states such as depression, anxiety, and rumination are not just psychological states, but key predictors of physical health and longevity. The emotional load of these states exerts strong effects on our physiological systems (nervous system, endocrine system, and immune system), and exert strong influence on how we behave. The profound impact on behavioural choices, along with effects on physiological systems will clearly contribute to chronic diseases leading to premature death. Allostatic load refers to the combined wear and tears that individuals experience physically as a result of chronic emotional pain, which leads to accelerated biological aging and subsequent health challenges. Research and years of working in the field have informed us that there is an implicit urgency to support strategies for mental health care on multiple fronts. Movement toward addressing the unexamined weight of emotional distress transcends clinical medicine. It requires conscious engagement and care whereby emotional health is viewed as a priority for individuals and communities. Addressed through building resilience and extending care to families and communities. This article is designed to help readers no matter their background realize that emotions have tremendous potential to enhance or diminish life and health. It has bridged scientific understanding and available knowledge to facilitate this process. The proposed graphics will also clarify complicated pathways and worldwide trends, while the reflection piece will reiterate the importance of human connection and compassion in alleviating faced challenges. A better understanding of how meaning and emotionality informs our physical destiny is a better pathway to more effective prevention policies, complete treatment options, and a life-long consideration of emotionality as a cornerstone for longer, healthier, and more fulfilling life.

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