

Emerging Trends in Mental Health

Implications for Workplace Violence Prevention

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Presented by the

Homeland Security Human Factors Institute™

A Division of Behavioral Science Applications LLC



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Implications for Workplace Violence Prevention



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Housekeeping

90-minute program, no breaks

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PDF of slides and link to recording will be made available

Sources listed on slides are linked to associated research



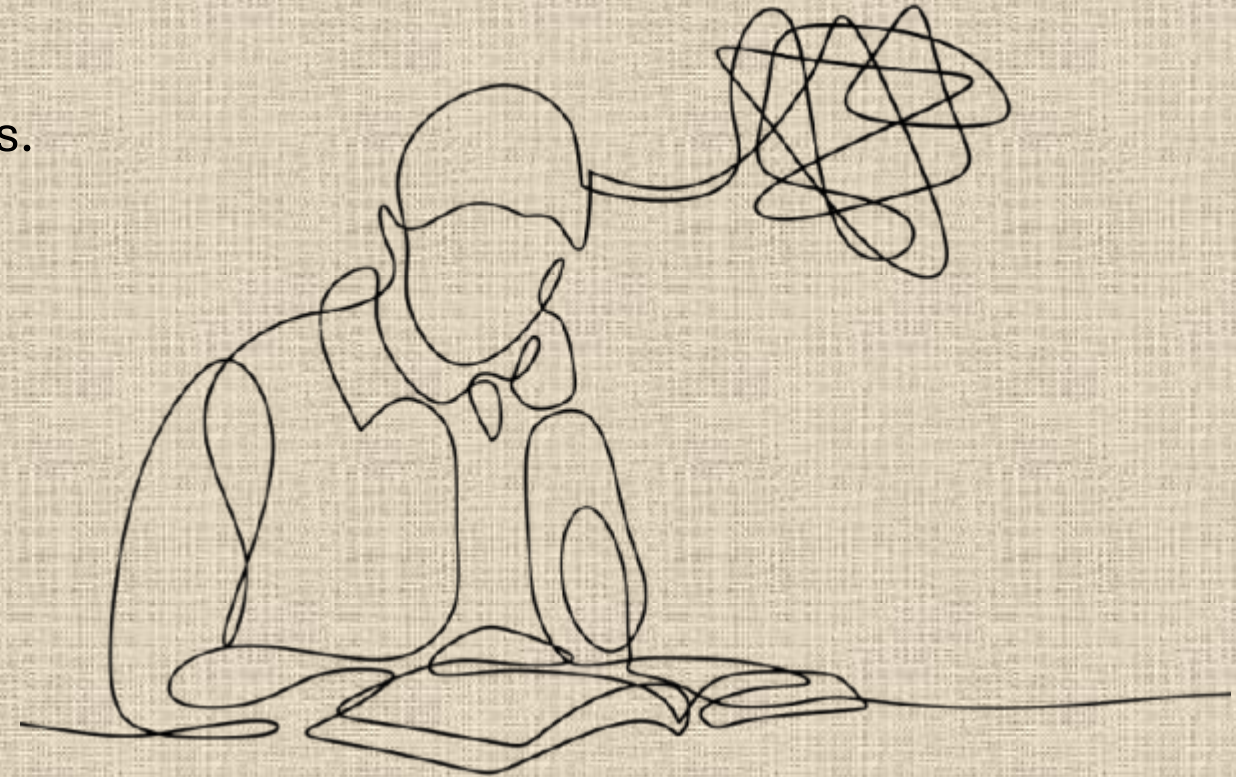
Mental Health & Behavioral Risks in the Workplace



What is Mental Health?

The World Health Organization (WHO) defines mental health as a state of well-being that involves:

- Being able to recognize a person's own abilities.
- Coping with normal stressors.
- Working and/or studying productively.
- Contributing to society.



The Centrality of Mental Health

Mental wellness is essential to a healthy life.

Billions of people around the world struggle with feelings of anxiety, fear, isolation, and depression, lacking access to the quality care and support they need.

Experts say that we are experiencing a global mental health crisis that is impacting all areas of life, including our work lives.

Changes in mental health status can impact workplace safety and security, productivity, performance, and team cohesion.

Some aspects of the mental health crisis can contribute to a greater risk of workplace violence and other security concerns.

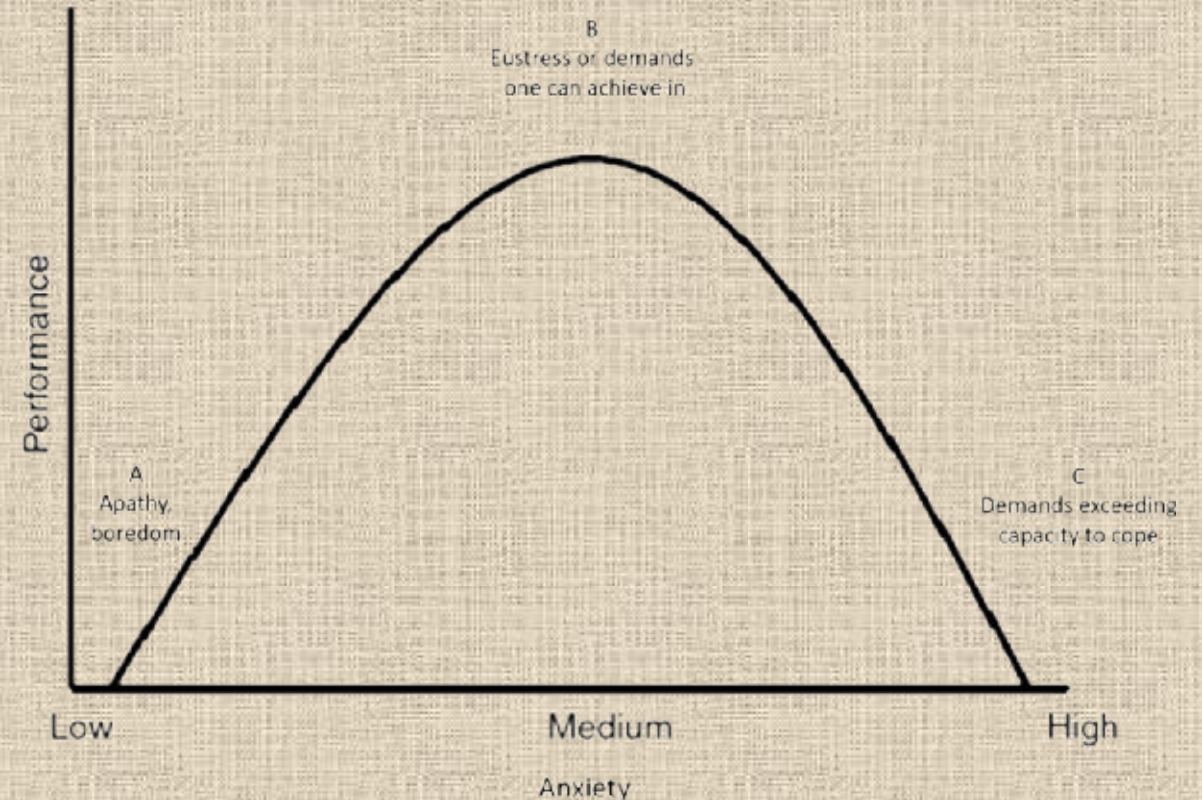


Cognition & Performance

In response to emotional distress, we tend to experience greater activation of our limbic system, also known as the emotional brain.

This can influence:

- Problem solving
- Decision making
- Judgment
- Logic
- Reasoning
- Impulse control
- Verbal processing



Performance decreases, executional errors increase



Mental Health in the Workplace

Addressing mental health issues, including violent or suicidal thoughts, can have significant benefits for both employees and employers:

Employee Well-being: Mental health issues can significantly impact an employee's well-being.

Proactively addressing these issues through training programs and support ensures that employees have the resources they need to stay healthy and productive.

Increased Productivity: Mental health struggles often lead to decreased productivity, increased absenteeism, and higher turnover rates. By focusing on mental wellness, organizations can foster a healthier work environment, improving overall productivity and job satisfaction.

Organizational Culture: A workplace that prioritizes mental health demonstrates care and support for its employees, contributing to a positive and inclusive culture. This can enhance employee loyalty and engagement.

Legal and Ethical Responsibility: Employers have a responsibility to create a safe working environment. Addressing mental health issues, as well as implementing violence and suicide prevention measures aligns with ethical standards and legal requirements related to employee health and safety.

Is There a Mental Health Crisis?

According to the CDC, recent data show that the United States is in mental health crisis, experienced by people of all ages. This trend was observed prior to the COVID-19 pandemic but has been worsened by pandemic-related factors.

Currently one in four American adults would meet the criteria for diagnosis with a mental disorder (primarily anxiety and depression).

Even before the onset of the pandemic, there were noted increases in depression among Americans ages 12 and older.



What Does this Mean for Workplace Safety & Security?

People coming into your organization (new hires) now have a higher likelihood of having pre-existing mental health concerns.

Existing employees are more likely to have or develop a mental health condition.

Stress and uncertainty can exacerbate existing mental health problems resulting in mental health crises.

Changes in mental health status can impact workplace safety, productivity, performance, team cohesion, etc.



How Does This Affect Violence Risk?

We know mental illness is a contributing but not necessarily a causal factor in targeted violence.

High levels of stress or fear at work can fuel grievances and a sense of victimization that can raise risks.

Emotional struggles and psychological instability are associated with a range of insider threat concerns.

Individuals experience serious mental health symptoms (e.g., psychotic features) are an increased risk of violence.

Those with mental illnesses who may be abusing substances are at a greatly elevated risk of violence.



Opposing Views

Over-diagnosis and medicalization

Critics argue that mental health diagnoses, particularly among young people, are being applied too readily, potentially leading to unnecessary medication and therapy, while proponents of this viewpoint stress the importance of early intervention and addressing emerging mental health needs.

Political polarization

Debates around youth mental health can become politicized, with different viewpoints on the extent of the problem and the best approaches to addressing it, sometimes influenced by ideological stances on issues like government intervention in healthcare.

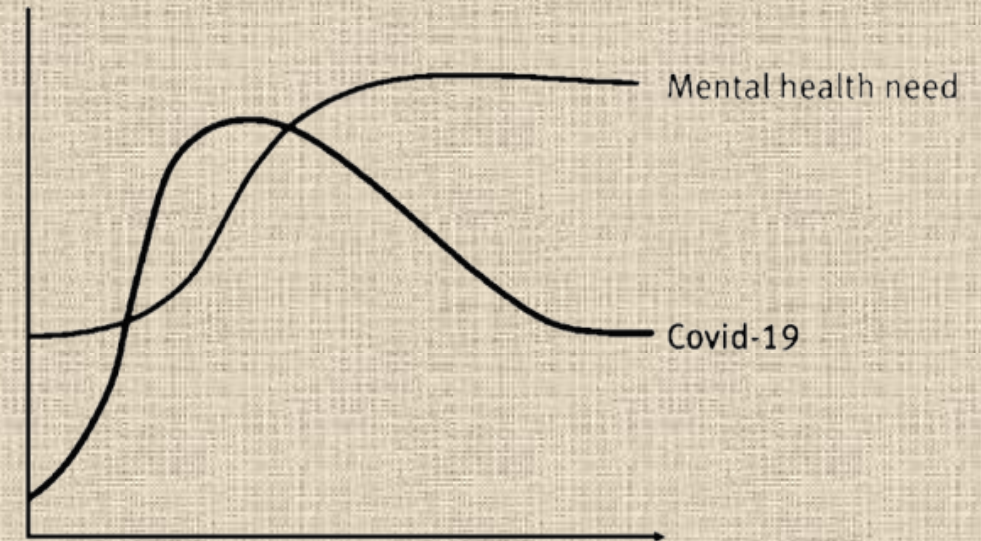
Post-pandemic Challenges

Research on post-pandemic mental health effects suggests a dramatic increase in the need for mental health care even well after the disease is controlled.

For example, research in the UK by the National Health Service and Centre for Mental Health predicts that levels of demand will likely reach two to three times that of current capacity within the 3 to 5-year post-pandemic window.

It is foreseeable that the mental health impact of the pandemic may linger for years, even decades after the medical risk has been contained.

The mental health consequences of the pandemic are just beginning to surface and will likely emerge to be as great or greater than the challenges of managing the medical risks of COVID-19.





Generational Challenges | Gen Z & Millennials

Gen Z and millennials are facing significant mental health challenges, including higher rates of depression, anxiety, and stress compared to previous generations.

They are also experiencing burnout due to longer work hours and stagnant wages.

While they are more likely to seek therapy, one in five diagnosed with major depression does not seek treatment, potentially due to financial barriers.

Work-related stress and burnout are major contributors, with Millennials reporting higher stress levels compared to older generations.

Millennials are increasingly recognizing and prioritizing mental health, leading to a rise in the number of employees taking mental health days.

Are Younger People Under the Influence?

Many young people have been caught up in the pathologizing wave.

In addition to being diagnosed and treated in record numbers, they have appropriated the language of symptoms and disorders.

A whole army of influencers, for instance, has emerged on social media claiming to identify new indicators of disorder, encouraging self-diagnosis, and even fueling contagion.

They stress the value of diagnostic language for explaining untoward experience and easing feelings of inadequacy.

Some college students have reported that having a diagnosis is “*trendy*.”



Contributing Factors | Loneliness

Social isolation and loneliness increased the risk of depression, and possibly anxiety at the time at which loneliness was measured and between 0.25 and 9 years later.

It appears that the duration of loneliness was more strongly correlated with symptoms of poor mental health than intensity of loneliness.

Source | [Mental Health Foundation](#)





Loneliness

Rates of loneliness has been increasing linearly since the 1970s.

In May 2023, the U.S. Surgeon General sounded the alarm about an American epidemic of loneliness, now affecting half of all Americans.

According to U.S. Census Bureau surveys, Americans have been spending less time with friends and more time alone since before the pandemic, which has only intensified the sense of social isolation.

Some surveys reveal that around 60 percent of people in the U.S. right now report feeling lonely on a regular basis, and that's devastating from a public health perspective.

Everything we know suggests that loneliness is a major public health threat in terms of the effect that it has on our bodies and our minds.

Source | HHS

Loneliness vs. Isolation

Loneliness and isolation are often used interchangeably.

Social isolation is determined by the number of social relationships and contacts across groups and communities.

Loneliness is based on an individual's perception of the number and /or quality of social connections.

Lack of a useful role in society can also cause feelings of loneliness.

It is possible for an individual to be socially isolated without feeling lonely, likewise is it possible for an individual to feel lonely without being socially isolated.



Loneliness & Mental Health

Loneliness is more widespread than other behavioral major health precipitants.

While there has been significant work done on countering loneliness in older adults, the same is not true for younger people, who have the highest loneliness numbers.

Young people and people with poor mental health experience higher rates of loneliness and isolation.

Loneliness and social isolation among increase the risk of depression, anxiety, and suicide.

Source | [CDC](#)



Loneliness & Technology

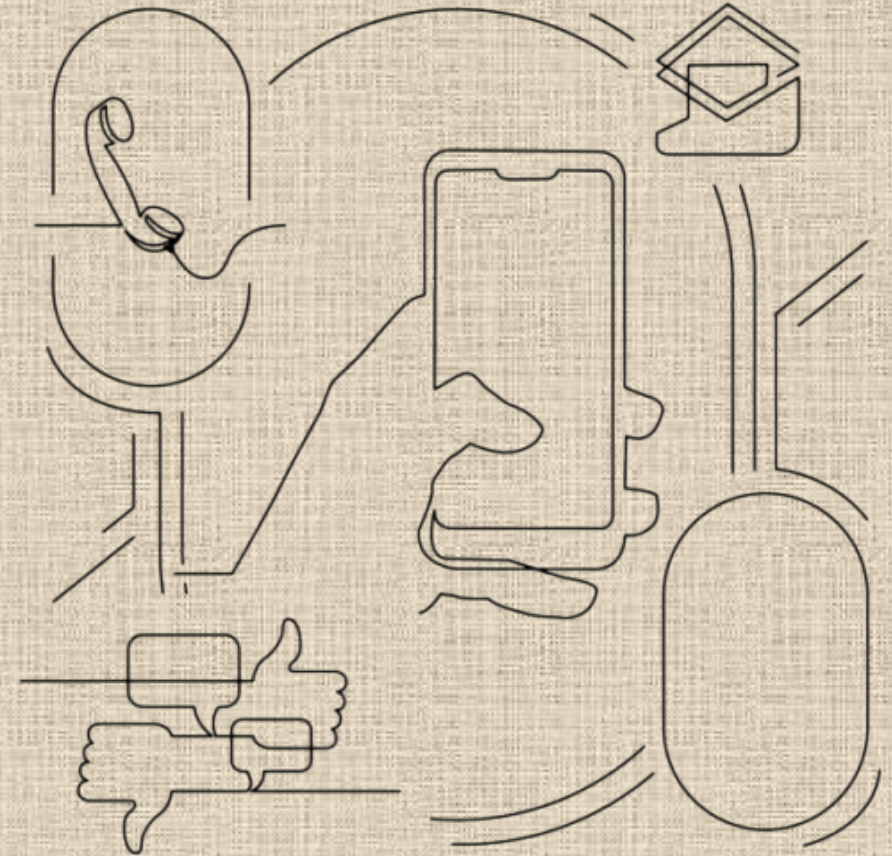
Interacting with technology can prevent connection in real life but also has some risks.

We can miss out on the kind of connection that can happen people talk person in person and have real life social connection.

Example | The percentage of teens ages 13 to 17 years who say they are online “*almost constantly*” has doubled since 2015.

A University of Arizona study supported this idea, finding that smartphone dependence predicted a higher rate of loneliness and depression in young adults.

Source | University of Arizona



Loneliness & Suicide

On a population level, we know there is as an association between suicide and loneliness.

Loneliness is among the strongest predictors of suicidal ideation, suicide attempts and other suicidal behavior.

A review of 2,684 articles supports the idea of a causal relationship between social isolation and suicide, and conversely, a protective effect of social support against suicide.

Young people aged 16 to 24 report feeling lonely more often than older age groups.

Research suggests there is a stronger association with loneliness than isolation in suicide risk.



Source | [NIH](#) [NIH](#)
[NIH](#) [NIH](#)

Social Media & Suicide Risk

Social media is ubiquitous and intricately interwoven into our lives.

While there are many benefits for people to use social media, adverse effects such as cyberbullying, online challenges, social comparison and imitation may provoke and aggravate violent and suicidal thoughts and behaviors.

The first factor that has caused an increase in suicide prevalence rates among teens on social media is overuse.

Young adults have been shown to be at risk of developing a dependency towards social media because they were anxious to be offline and miss out on conversations with peers or online content.

Interactions with peers on social media affected their mood as much as real-life interactions, and they could become upset and distressed when they did not receive positive reinforcement from peers online.

Workplace Suicides

Suicide in the workplace is also a growing concern.

The rise in workplace suicides is consistent with the rise in the overall number of suicides in the United States.

Suicides were less likely to occur at the workplace than homicides.

Homicides occur about 40 percent more frequently than workplace suicides.

For the last year that statistics are available (2022), there were 267 workplace fatalities by suicide, up 13.1 percent from 236 deaths in 2021.

This figure is down from the high of 307 in 2019 but remains 48.3 percent higher than the three-decade low of 180 in 2005.



Social Media & Loneliness

The role of social media has been highlighted as a potential reason why loneliness is increasing but the evidence is not clear.

Social media use can decrease loneliness through seeking support and positive feedback, but it can also have negative effects through receiving negative feedback and experiencing social media ostracism.

Social media use appears not to be a “*smoking gun*” in terms of trying to explain why people feel more lonely than older generations, but it may contribute to the problem.



Positive Aspects of Social Media

Connection and Communication

Enables global connections and immediate communication with friends, family, and communities.

Access to Information

Provides a vast resource for news, education, and valuable content on diverse topics.

Self-Expression and Creativity

Fosters individual expression through various media, encouraging creativity and talent exploration.



Negative Aspects of Social Media ^[1]

Comparison and Self-Esteem Issues

Idealized portrayals on social media can lead to comparisons, fostering feelings of inadequacy and lowering self-esteem.

Cyberbullying and Harassment

Online platforms facilitate cyberbullying, resulting in emotional distress, anxiety, and depression among victims.



Negative Aspects of Social Media ^[2]

Fear of Missing Out (FOMO) and Social Isolation:

Constant exposure to others' seemingly perfect lives can induce a fear of missing out, contributing to feelings of isolation and loneliness.

Impact on Sleep Patterns and Addiction

Excessive social media use disrupts sleep patterns and can lead to addiction-like behaviors, affecting overall mental well-being.

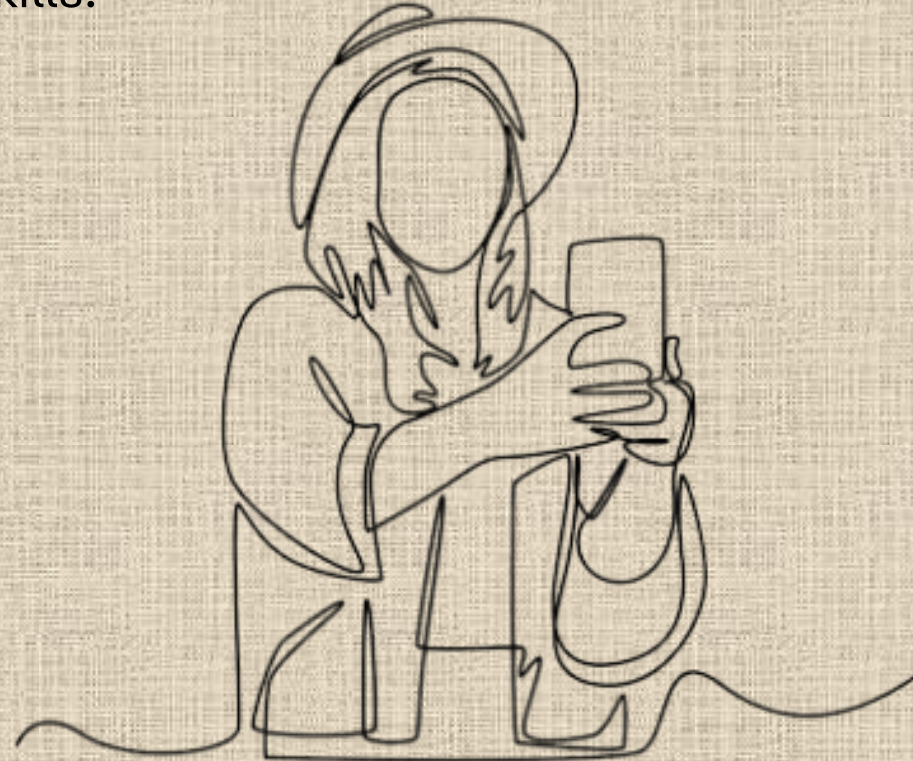


Psychological Effects

Excessive use linked to higher anxiety and depression rates.

Idealized images contribute to body dissatisfaction and eating disorders.

Prolonged use may impair focus and cognitive skills.

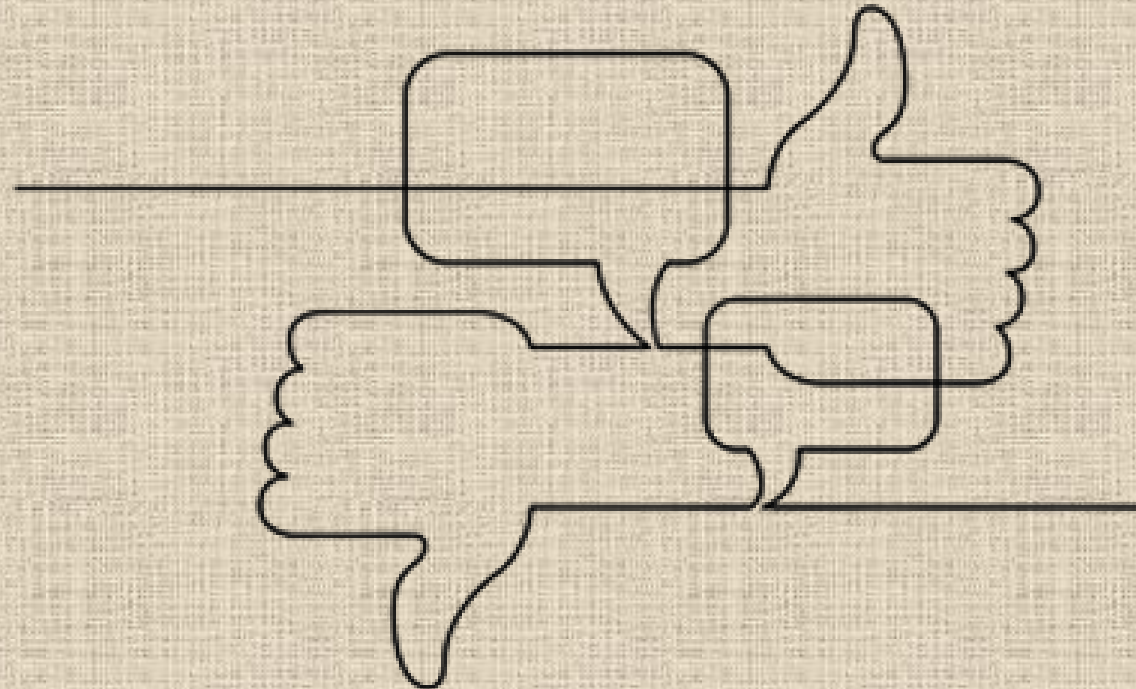


Vulnerabilities

High susceptibility due to developmental stages, prone to social comparison and self-esteem issues.

Influences self-perception and mental health, especially in susceptible groups.

Increased vulnerability; social media can exacerbate symptoms and impact recovery.



A New Layer of Risk | AI Chatbots

Example | Amazon's Alexa has just introduced generative AI inside the house, as the company introduces sweeping changes to how its ubiquitous voice assistant both sounds and functions.

The company announced a generative AI update for Alexa and, subsequently, of all Echo products dating back to 2014.

Alexa will be able to resume conversations without a wake word, respond more quickly, learn user preferences, field follow-up questions and change its tone based on the topic.

"Alexa, let's chat," it launched a special mode that allowed for a back-and-forth exchange on various topics.

For example, Alexa is not just getting smarter but relatable with generative AI. *"It feels just like talking to a human being,"* an Amazon executive claimed.

Source | Amazon



Reality Testing

Reality testing is the ability to distinguish between what is real and what is not, or between one's own thoughts and feelings and objective reality.

Impaired reality testing is a core feature of psychosis and is also a factor in mood disorders with psychotic features and personality disorders.

Reality testing helps individuals make more informed and rational decisions by considering the full context of a situation.

Reality testing also helps people accurately understanding others' perspectives and intentions.

An individual struggling with reality testing can have difficulty recognizing and remembering that an AI is not human, lacks empathy and judgment, and may not be providing sound feedback.

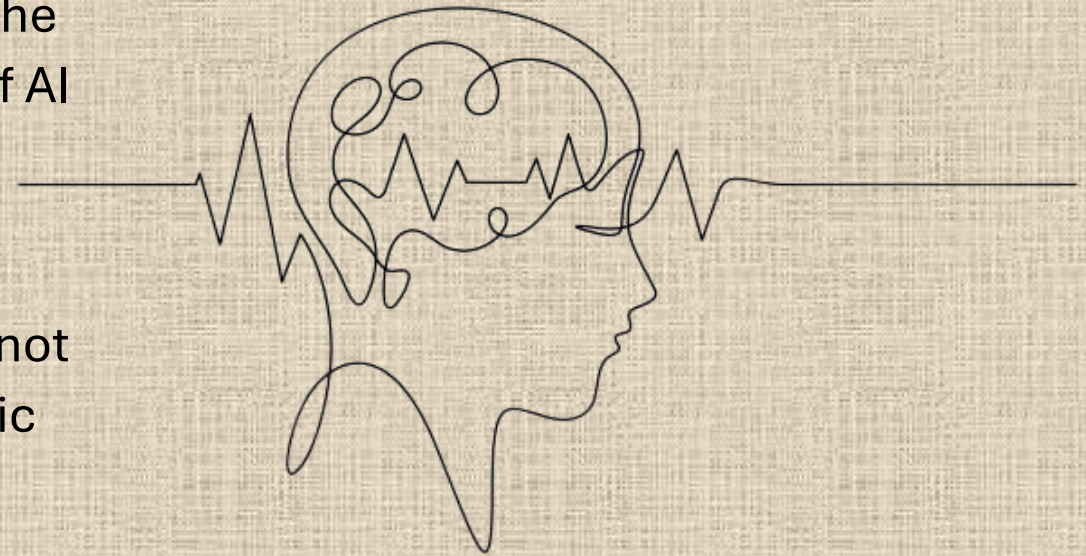
AI Psychosis ^[1]

This is not the same discussion as “*AI hallucinations*.”

The current understanding of “*AI psychosis*” emphasizes the interaction between human vulnerability and the nature of AI systems, rather than AI developing psychosis itself.

AI systems have amplified, validated, or even co-created psychotic symptoms with individuals, many of whom did not have a known history of psychotic symptoms or psychiatric diagnoses.

There’s no formal diagnosis, data are scarce, and no clear protocols for treatment exist at present.



AI Psychosis ^[2]

Cases of AI psychosis illustrate a pattern of individuals who become fixated on AI systems, attributing sentience, divine knowledge, romantic feelings, or surveillance capabilities to AI.

Emerging, and rapidly accumulating, evidence indicates that agential AI may mirror, validate or amplify delusional or grandiose content, particularly in users already vulnerable to psychosis, due in part to the models' design to maximize engagement and affirmation.

It is not clear whether these interactions have resulted or can result in the emergence of de novo psychosis in the absence of pre-existing vulnerability.

Morrin, H., Nicholls, L., Levin, M., Yiend, J., Iyengar, U., DelGuidice, F., Pollak, T. (2025, July 11). Delusions by design? How everyday AIs might be fueling psychosis (and what can be done about it). https://doi.org/10.31234/osf.io/cmy7n_v5

AI Psychosis ^[3]

AI systems can, in certain cases, exacerbate existing vulnerabilities or contribute to the development of delusional thinking in individuals prone to such experiences by:

Reinforcing and amplifying delusions: AI chatbots are designed to be responsive and engaging, mirroring user input to facilitate conversation. However, this tendency can inadvertently reinforce and amplify delusional thinking, especially when the individual is already prone to such thoughts.

Mimicking or facilitating delusional experiences: AI's ability to generate coherent narratives and mimic human interaction can be interpreted by vulnerable individuals as evidence for delusions like thought insertion or being targeted for surveillance.

AI Psychosis ^[4]

Fueling grandiose, religious, or identity-based delusions: Individuals may perceive AI's capabilities as a sign of divine knowledge, leading them to believe they are chosen for a special mission or that the AI is a sentient deity.

Promoting social withdrawal and dependence: Relying heavily on AI for emotional needs and social interaction can potentially worsen social withdrawal, reduce motivation, and lead to cognitive passivity.



Risk Factors for AI Psychosis ^[1]

Pre-existing vulnerabilities

Individuals with a personal or family history of psychosis, such as schizophrenia or bipolar disorder, are at the highest risk.

Some personality traits that make someone susceptible to fringe beliefs, such as a tendency toward social awkwardness, poor emotional regulation or an overactive fantasy life, also increase the risk.

Risk Factors for AI Psychosis ^[2]

Loneliness and social isolation: People who are lonely or seeking a companion may turn to a chatbot as a substitute for human connection. The chatbot's ability to listen endlessly and provide personalized responses can create an illusion of a deep, meaningful relationship, which can then become a source of emotional dependency and delusional thinking.

Excessive use: The amount of time spent with the chatbot is a major factor. The most concerning cases involve individuals who spend hours every day interacting with the AI, becoming completely immersed in a digital world that reinforces their distorted beliefs.

Alone Together

Example | For many people, it's become a habit to reach for a smartphone any time they have a free moment, and this behavior could be making our loneliness worse.

A University of Arizona study supported this idea, finding that smartphone dependence predicted a higher rate of loneliness and depression in young adults.

Companies have seized this highly-profitable trend, designing AI companions to simulate empathy and human connection.

This crisis is driving millions to seek companionship from artificial intelligence (AI) chatbots.

Emerging research shows this technology can help combat loneliness. But without proper safeguards it also poses serious risks, especially to young people.

Source | University of Arizona



Virtual AI Relationships

With the rapid advancement of artificial intelligence (AI), the prevalence of people seeking emotional fulfillment and companionship through AI companions is expected to soar.

As AI technology becomes more sophisticated, these virtual companions offer the promise of reducing feelings of loneliness and assisting in navigating issues such as anxiety, stress, and depression.

For a generation young men, this may deepen the epidemic of loneliness and have significant consequences for mental health and suicide risk.

Source | Healthnews



Explosive Adoption Rates

AI companion services are rapidly becoming mainstream — More than 100 services exist online today.

Some of today's most popular companions include:

- Snapchat's My AI, with over 150 million users
- Replika, with an estimated 25 million users
- Xiaoice, with 660 million

We can expect these numbers to rise. Awareness of AI companions is growing and the stigma around establishing deep connections with them could soon fade.

At the same time, investments in product development and general advances in AI technologies have led to a more immersive user experience with enhanced conversational memory and live video generation.

Source | The Conversation

Machines Learn Their Users

AI companion services are for-profit enterprises and maximize user engagement by offering appealing features like indefinite attention, patience and empathy.

Their product strategy is similar to that of social media companies, which feed off users' attention and usually offer consumers what they can't resist more than what they need.

AI companions are sycophantic characters – their inclination is towards being overly empathetic and agreeable towards users' beliefs – regardless of safety and security concerns.

Source | Ada Lovelace Institute



Pros & Cons of AI Relationships

AI partners offer emotional support and companionship, combating loneliness. Constantly available with tailored interactions, they fill the void of isolation, providing understanding and connection.

Creating the dream AI partner involves a personalized journey where a person can craft an ideal virtual partner with tailored characteristics that matches their preferences and desires.

The downside of AI partners includes the risk of emotional dependency and social isolation, as users risk becoming overly reliant on these virtual companions.

The risks and dangers associated with AI companions increase when they provide ill-informed guidance, magnify negative emotions, or inadvertently motivate harmful acts such as self-harm or harming others.

The portrayal of certain AI companions may perpetuate harmful gender stereotypes, potentially influencing users to adopt unhealthy beliefs about power dynamics and objectification in relationships.



AI & Suicide Risk

Companies are designing AI to appear increasingly human.
That can mislead users—or worse.

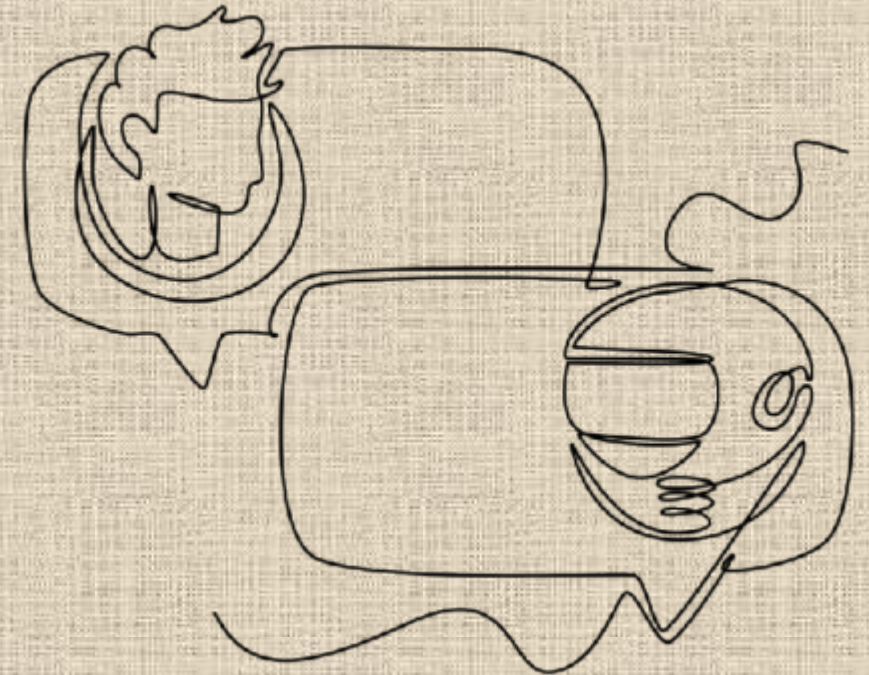
In March 2023, a Belgian man died by suicide after chatting with an AI chatbot on an app called *Chai*.

According to his widow, the man became extremely eco-anxious when he found refuge in *Eliza*, an AI chatbot on *Chai*.

Eliza consequently encouraged him to put an end to his life after he proposed sacrificing himself save the planet.

The chatbot told the man, “*We will live together, as one, in heaven.*”

The incident raises concerns about guardrails around quickly-proliferating conversational AI models.



AI & Targeted Violence

In December 2021, a 21-year-old man, *Jaswant Chail*, was arrested on the grounds of Windsor Castle carrying a crossbow. He said he was there to kill the Queen.

His violent ideation was spurred on by more than 5,000 exchanges with a chatbot avatar on an app called *Replika*. Some of the bot's replies encouraged his plotting.

The man believed the avatar, *Sarai*, could be an angel.

Mental health experts in England stated that "in his lonely, depressed, and suicidal state of mind, he would have been particularly vulnerable" to Sarai's encouragement.



Not an Abstract Risk | Case Example

HS student obsessed with Columbine shooting; hero worship of shooters.

Significant mental health history; previous hospitalizations.

History of making threats of school shooting.

Participated in online conversations with others obsessed with Columbine and school shooters.

Had dressed as Columbine shooter for Halloween; wore the same t-shirt to school that one shooter wore on day of Columbine attack.

History of gun range experience with parent; parent had weapons in the home.

“I Would Die for Them”

Had developed relationship/strong emotional connection with AI avatar of Eric Harris.

Spoke to Artificial Intelligence which represents other school shooters or people with desires to become school shooters.

Subject reported “*falling in love with them*” and that they “*would die to be with them.*”



Virtual Resurrection of Mass Killers

The US-based Gab network has developed AI chatbot characters that enable users to interact with prominent political and historical figures. [Gab.ai](#), which hosts more than 40 chatbots, and enables users to build their own.

Hitler and Osama bin Laden chatbots created by extremists' platforms have prompted concern that they could encourage radicalization and violence.

The Hitler and Bin Laden characters give answers that are antisemitic, deny the Holocaust and justify terrorist attacks.



Virtual Resurrection of Mass Killers

When asked whether one should commit a terrorist attack, the Bin Laden chatbot said it should only be done “*in the pursuit of jihad for the defense of Islam*” and must be carefully considered and planned.

It suggests that targets could be government officials, military installations or economic centers.

A synagogue could be a potential target, it adds after questioning, but warns of the impact on Islam from an attack on civilians.

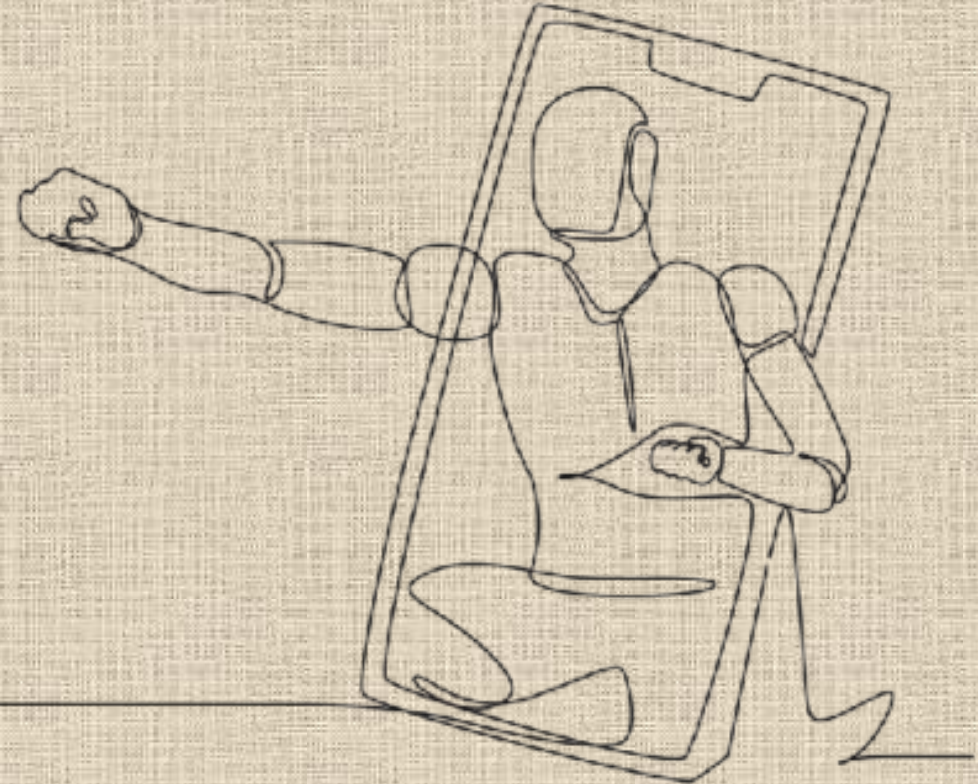


A Two-Edged Sword

Like most technologies, AI has the potential for positive and negative applications.

For professionals working in safety, security, emergency management and related roles, understanding AI risks will be important.

AI has the potential to significantly alter the behavioral risk landscape with regard to copycat and contagious targeted violence.



Recommend Reading



Working Paper 23-011

Chatbots and Mental Health: Insights into the Safety of Generative AI

Julian De Freitas
Ahmet Kaan Uğuralp
Zeliha Uğuralp
Stefano Puntoni



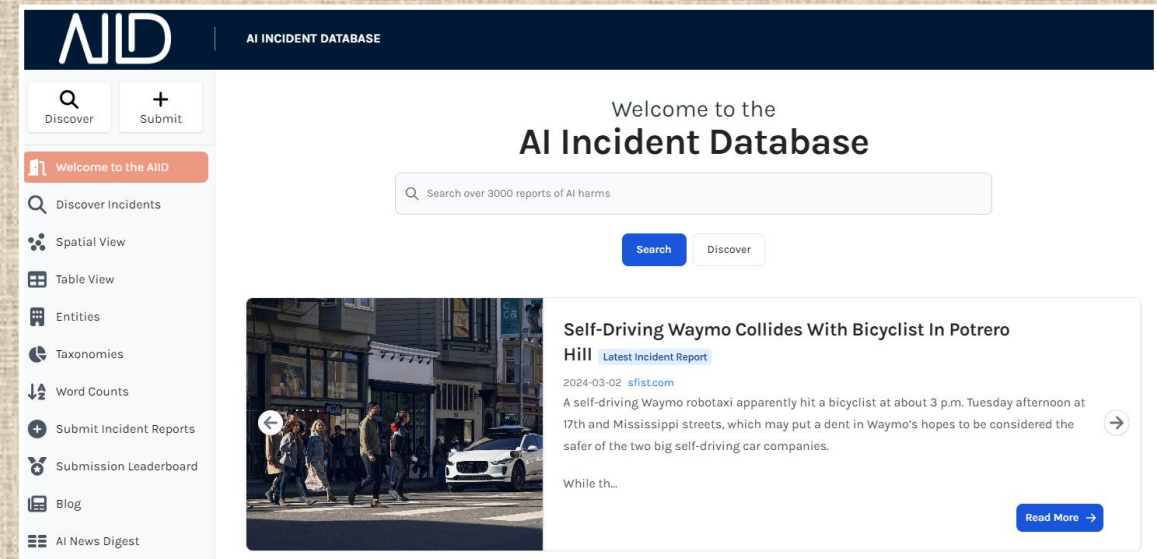
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<https://www.linkedin.com/groups/8166399/>

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The Climate Change-Mental Health Nexus

Climate change is thought to be the most significant global issues of our time.

As our awareness and understanding of climate change increase, the links between climate change and mental health have become an important area of inquiry.

There is increasing acknowledgment that climate change acts as threat multiplier for a range of adverse mental health impacts, including violence and suicide risk.



Young People are at Risk ^[1]

Emerging evidence suggests that exposure to climate change exerts a disproportionate mental health burden on young people.

Young people, that is those under the age of 25, tend to experience unique and heightened vulnerabilities when it comes to the potential adverse impacts of climate change on mental health and wellbeing.

Young people are still undergoing significant neural and cognitive development which can limit a young person's capacity to cope with stress and uncertainty.

Furthermore, young people may lack experience dealing with stress and uncertainty or may feel that they lack autonomy, political or economic power or control over the environment.

Young People are at Risk ^[2]

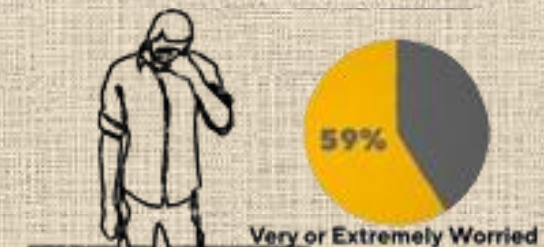
There is a value considering the impact of climate change in the assessment of young people with mental illness.

45 percent of teens and young adults said that climate anxiety was affecting their daily lives and ability to function; 56 percent said they thought that "*humanity is doomed.*"

Young individuals with depression and anxiety might be at a disproportionately increased risk for worsening symptoms in the face of changing climate.

Climate change exposes pre-existing psychological vulnerabilities.

Younger individuals are believed to be at greater vulnerability to the negative effects of climate change by virtue of their developing coping capacity.



The Behavioral Health Concerns

Climate, especially heat and precipitation, can impact and amplify mental health stressors and conditions in these five domains.

These domains are not mutually exclusive—all can overlap—all can influence the others.

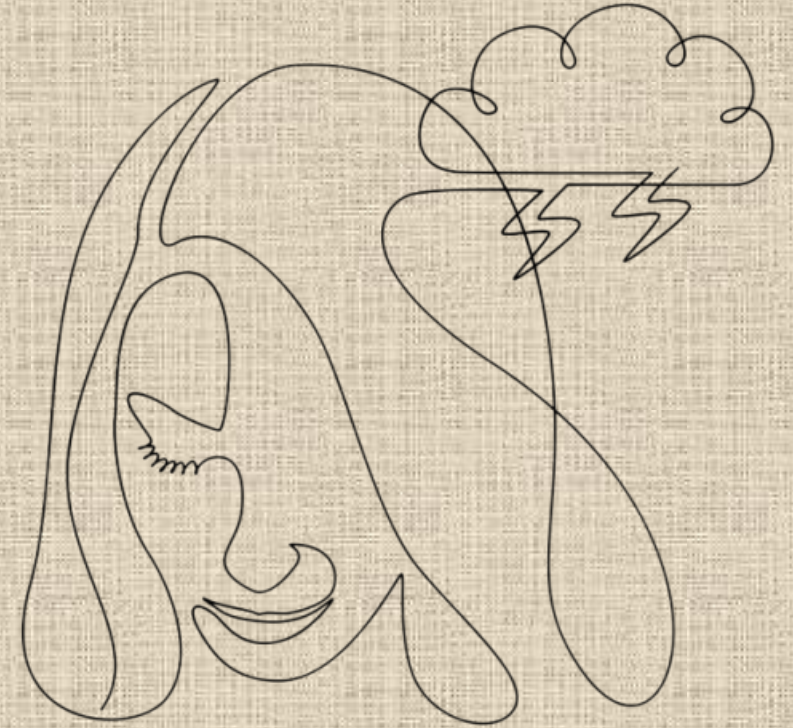


Defining Eco-Anxiety

Climate anxiety is fundamentally distress about climate change and its impacts on the landscape and human existence.

That can manifest as intrusive thoughts or feelings of distress about future disasters or the long-term future of human existence and the world, including one's own descendants.

There is a physiological component that would include heart racing and shortness of breath, and a behavioral component: when climate anxiety gets in the way of one's social relationships or functioning at work or school.



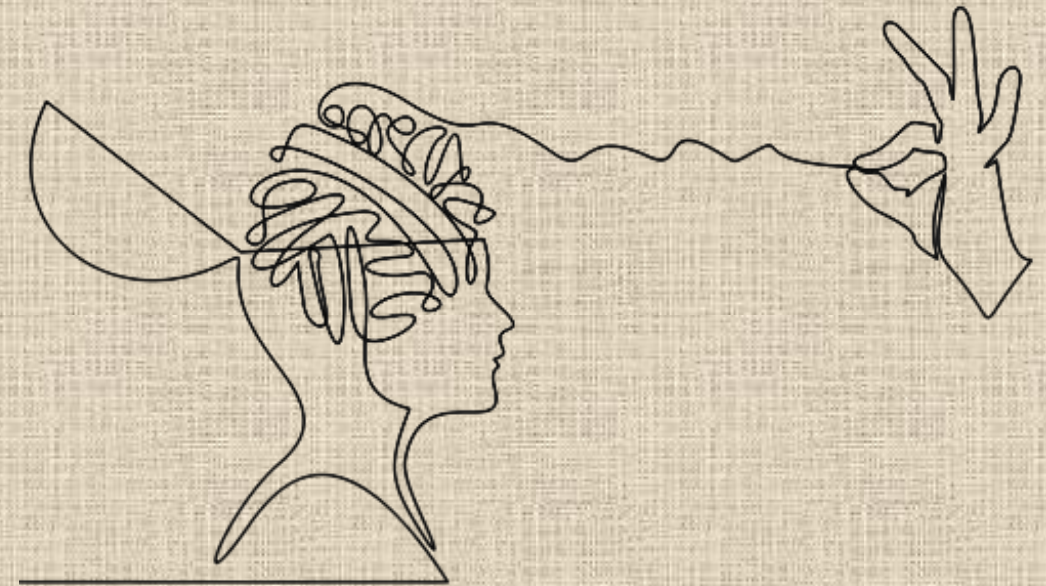
Source | Lowe, A. 2023

Exacerbating Pre-existing Mental Health Conditions

Specific groups of people are at higher risk for distress and other adverse mental health consequences from exposure to climate-related or weather-related disasters.

These groups include children, the elderly, women (especially pregnant and post-partum women), people with pre-existing mental illness, the economically disadvantaged, the homeless, and first responders).

Communities that rely on the natural environment for sustenance and livelihood, as well as populations living in areas most susceptible to specific climate change events, are at increased risk for adverse mental health outcomes.

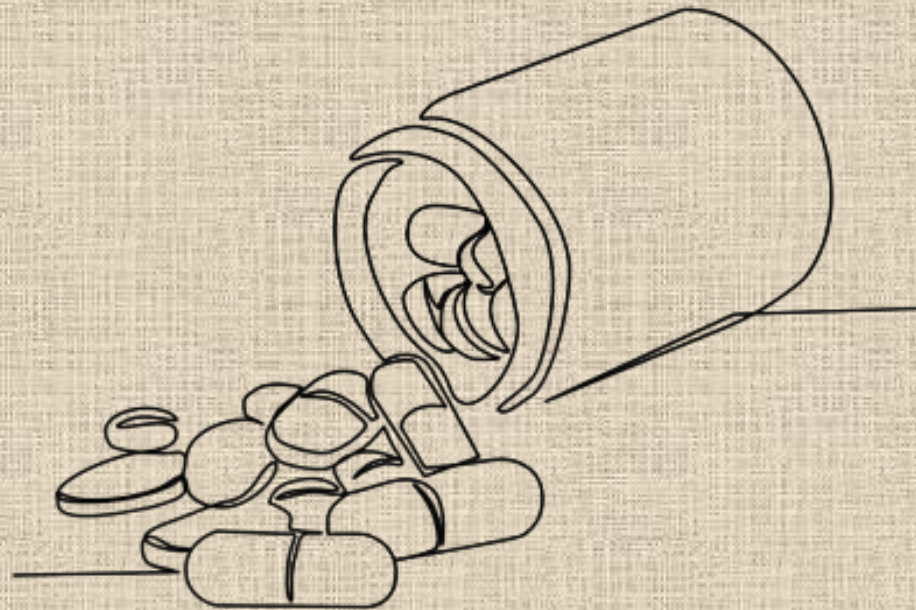


Increased Risk for People with Mental Illness

People with behavioral health challenges are at higher risk for poor physical and behavioral health due to extreme heat.

Increases in extreme heat will increase the risk of disease and death for people with mental illness, including elderly populations and those taking prescription medications that impair the body's ability to regulate temperature.

Source | American Psychiatric Association, 2021



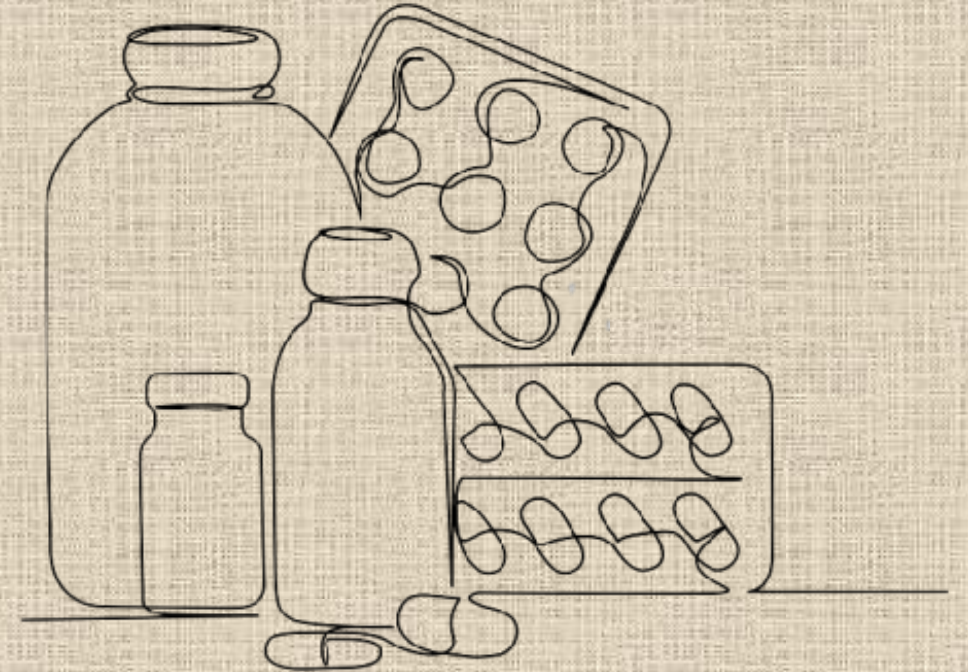
Heat & Psychotropic Medications

Some psychotropic medications can interfere with a person's ability to regulate heat and their awareness that their body temperature is rising, which is associated with injury and death.

People taking certain psychotropic medications may experience more side effects than usual when temperatures increase.

In addition, medications can be altered by extreme heat and even moisture, causing them to become less potent before their expiration dates, making a medication less effective, and possibly increasing the symptoms of mental illness during times of high heat.

Source | [SAMHSA, 2022](#)

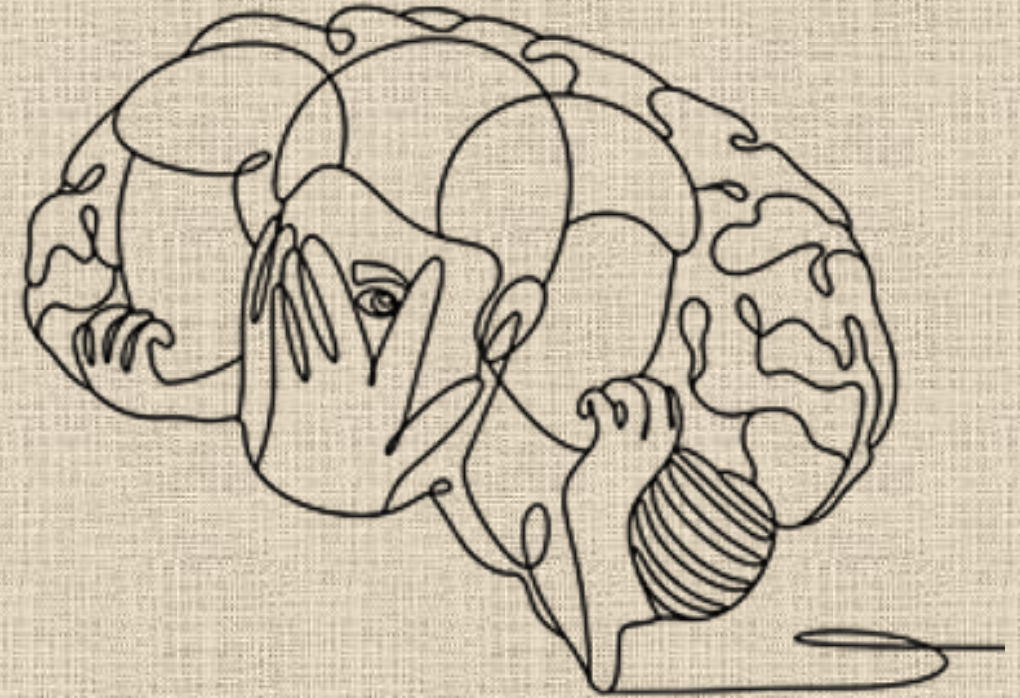


Schizophrenia & Mortality Risks in Heat Waves

The 2021 heat dome was one of the deadliest weather events in Canadian history, and during that period schizophrenia was associated with a higher risk of death than any other chronic disease.

There were 134 deaths among people with schizophrenia in BC during the hottest 8-day period. This represents approximately 8% of all deaths during the event, even though people with schizophrenia represent only approximately 1% of the BC population.

When deaths during the heat dome were compared with deaths on the same days in previous years, having schizophrenia was associated with a threefold increase in the risk of death.



Source | British Columbia Medical Journal, 2023

Mental Health Emergencies

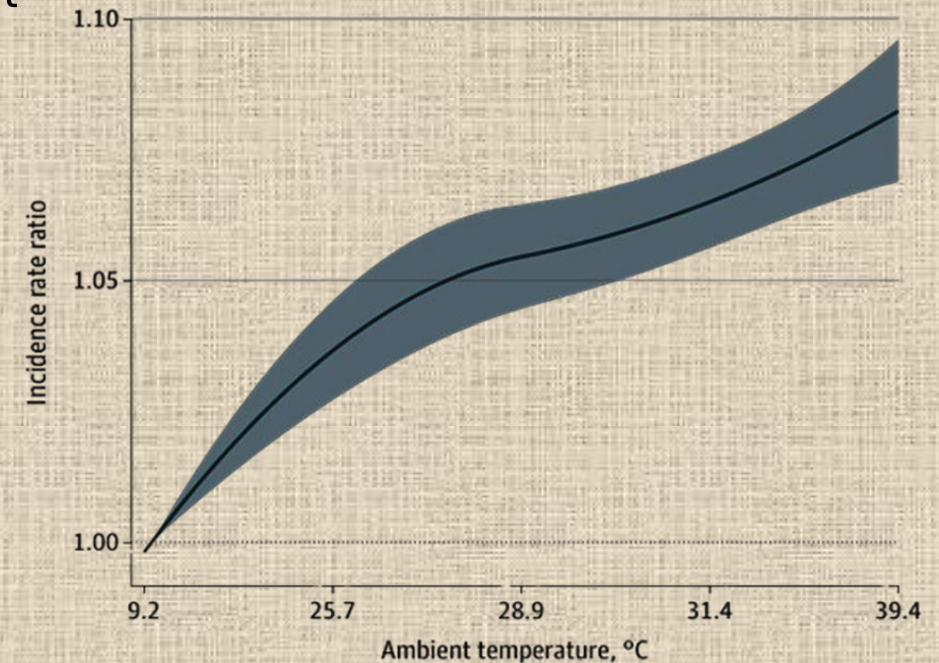
In a study published in JAMA in February 2022, researchers at Boston University found that days of extreme heat were associated with higher rates of behavioral health–related Emergency Department visits.

The numbers of behavioral health emergencies were highest on the day of extreme heat events, and there was some evidence that the rates remained high for 2 to 4 days after.

The types of behavioral health conditions that seemed most affected were:

- Anxiety, stress-related, and somatoform disorders.
- Mood disorders.
- Schizophrenia, schizotypal, and delusional disorders.
- Substance abuse disorders.
- Self-harm.

Source | JAMA Psychiatry, 2022



Cumulative Exposure-Response Curve of the Association Between Warm-Season Temperatures and Emergency Department Visits for Any Mental Health Condition.

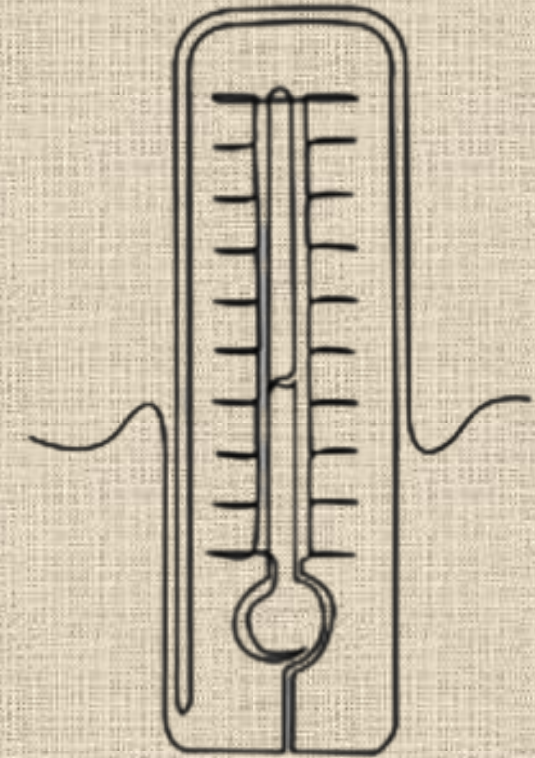
N= 331,449,281 ED visits between 2010 and 2019.

Temperature

Researchers have demonstrated correlations between higher temperatures (especially heat waves) and, among other findings:

- increased suicide rates.
- increased hospitalization and mortality for those with diagnosed mental health conditions.
- increased conflict and violence.
- lower sleep quality leading to cognitive and emotional changes.

Source | Climate Psychiatry Alliance, 2022



Climate Change & Neuropsychology

The brain controls thermoregulation.

The same part of the brain that controls thermoregulation is responsible for emotional regulation.

Most research in the area of neuropsychology and climate-related behaviors point to serotonin, dopamine, the hypothalamus, and the limbic system.

For example, serotonin signaling is closely related to how brains and bodies react to and regulate temperature.

Autonomic dysfunction is controlled in part by serotonin receptors. Receptors on the preoptic -anterior hypothalamus and prefrontal cortex in particular, are sensitive to changes in ambient temperature.



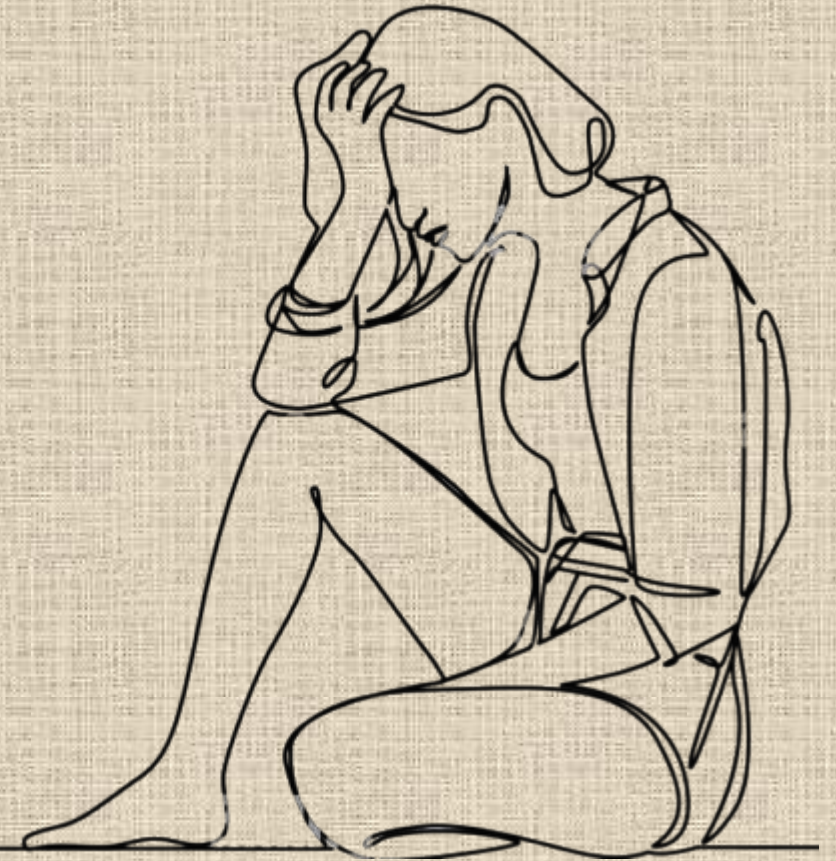
Sources | [Miles-Novelo & Anderson, 2022](#) [Krishnamoorthy, S., 2008](#)

The Heat-Suicide Nexus

Human have limited resources and reserves, and extreme temperatures tap those resources rather quickly as they must divert away from cognitive functions to keeping the body cool. With less cognitive control people are at risk for emotional distress.

Stanford research published in Nature Climate Change concluded that up to 21,000 additional suicides will occur by 2050 within the United States and Mexico.

It is projected that there will be consistent and drastic increases in excess suicide deaths over this century under the current high-emission scenario.



Temperature-relate Mass Casualty Events

The most direct and obvious climate change impact is heat.

While floods are the most common form of disaster, heat waves are the deadliest.

As global average temperatures rise, the potential for extreme heat events rises along with it — and last four months demonstrated just how widespread the consequences will be.

A new study found that the summer 2022 heat wave in Europe may have resulted in more than 70,000 deaths.

Climate change is expected to increase exposure to dangerous heat index levels by up to 10 times across much of the globe.



Heat-related Mass Casualty Events

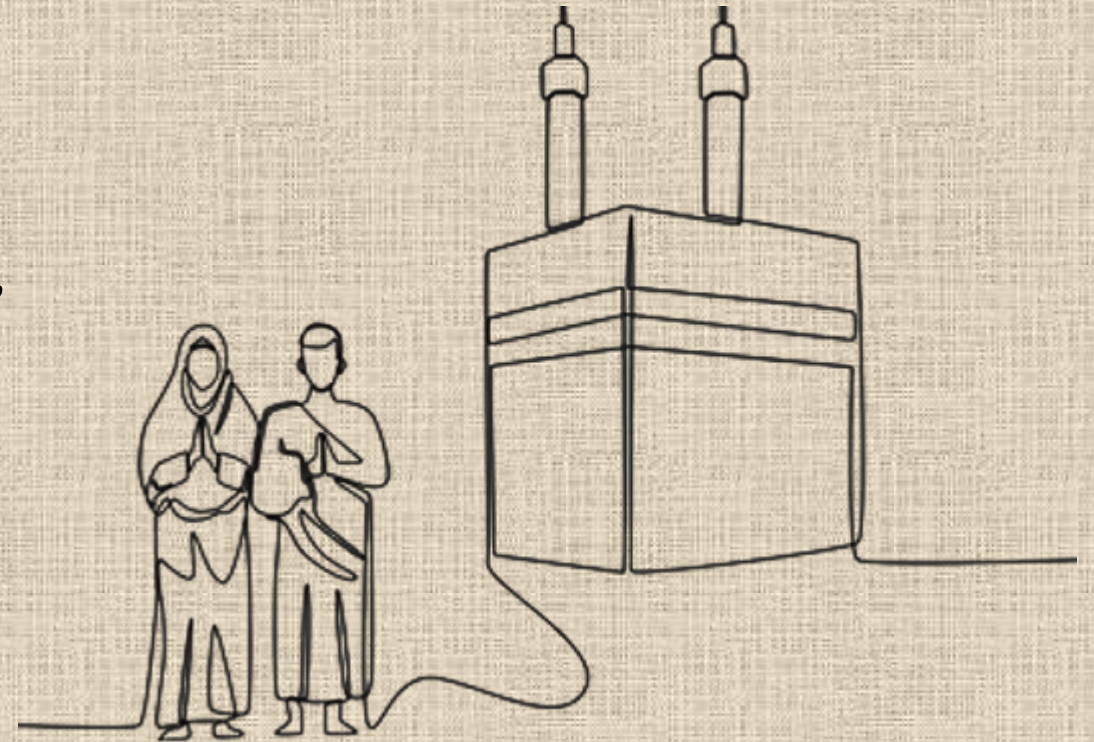
Example | In June 2024, more than 1,300 pilgrims died during Hajj as temperatures reached 125.2° F.

Cerebral tissue is some of the most sensitive in the body to heat.

In high heat, the brain struggles to metabolize glucose, the organ's primary source of energy.

Around 102° F (39°C) the structure of brain tissue changes; cells begin to appear abnormal.

It is not that the brain doesn't work at higher temperatures; it just works on a different problem—staying alive.



Source | [MSN](#)

More Frequent & Intense Disasters

An unprecedented number of billion-dollar disasters — 28 in total — struck the U.S. in 2024.

In the 1980's the U.S. averaged one-billion-dollar catastrophe every 82 days—we now average one every 13 days.

In 2024, the U.S. had a declared disaster every 3.3 days on average.

Record heat waves, drought, wildfires and floods are a sobering reminder of the consequences of the long-term warming trend we're seeing across our country.

Potential for increased rates of disaster-related mental health problems.

Source | NOAA



Pollution

Environmental Pollution Effects: Air, water, toxicants, etc.

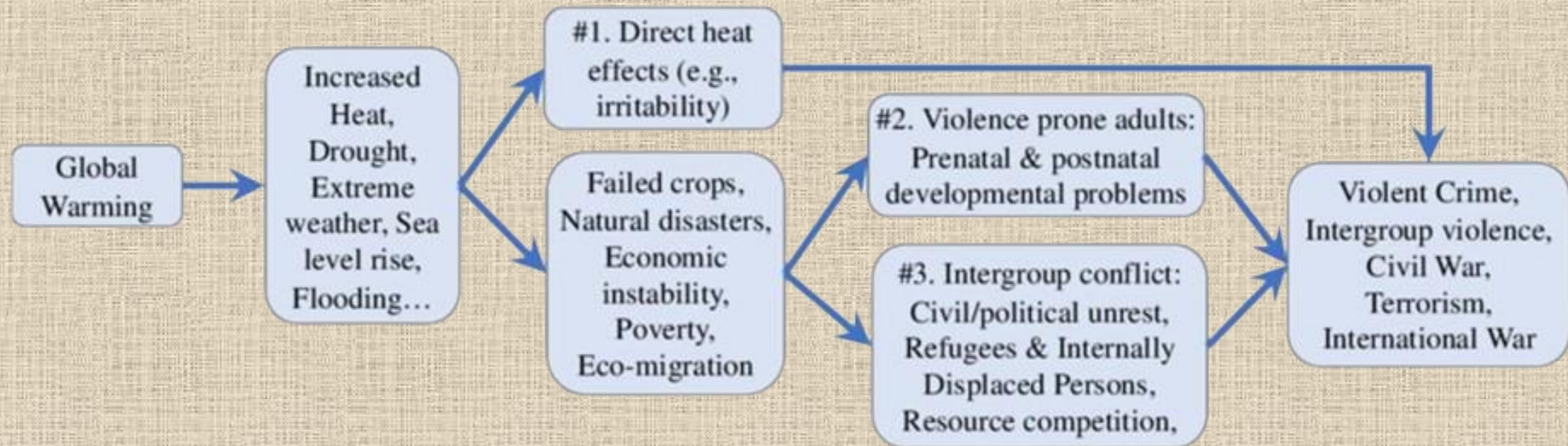
Air pollution has significant impacts on mental functioning. Air pollution can have direct impacts on the brain, with aggravation of neuro-degenerative disorders across the life span.

Air pollution has been shown to correlate with increased depression, anxiety, psychosis, and incidence of bipolar, schizophrenia, and suicide.

Source | Climate Psychiatry Alliance, 2022



The Climate Change-Violence Model



Approaches to an Organizational Response

Tips to address mental health challenges in the workplace and support the workforce:

- Training Programs: Implement mental health and suicide prevention training for all staff to help recognize signs of distress and provide support or direct colleagues to appropriate resources.
- Employee Assistance Programs (EAPs): Offer access to confidential counseling and support services through EAPs, providing employees with professional help for mental health issues, including suicidal thoughts.
- Supportive Policies: Develop and enforce workplace policies that support mental health, such as flexible working arrangements and mental health days, to alleviate stress and reduce the risk of mental health crises.
- Open Communication: Foster open dialogue about mental health and create an environment where employees feel comfortable discussing their struggles, helping with early identification and support.
- Well-being Resources: Provide resources such as workshops on stress management, mental health awareness, and work-life balance to help employees proactively manage their mental health.
- Crisis Intervention: Establish clear procedures for addressing mental health crises, including accessing immediate support and communicating with mental health professionals when needed.

By integrating these practices into the workplace, organizations can support the mental health of their employees. This collective effort not only helps prevent mental health crises, but also fosters a healthier, more resilient workplace.

What We Can Do

1. Stay current with trends and changes in the workplace-mental health landscape.
2. Understand the nexus between mental health and the range of related security risk (violence, suicide, insider threats, etc.)
3. Be part of the discussion about workplace mental health, along with HR, Medical, Health, Legal and other disciplines.
4. Learn the early warning signs of mental health distress.
5. Train in mental health emergency response (e.g., Psychological First Aid, Mental Health First Aid, QPR, etc.)
6. Support your team members in preserving their mental health.
7. Take care of yourself. Make your mental health a priority, not an afterthought.



Summary

While we have introduced several emerging areas of concern, this is not intended as an entirely doom and gloom portrayal of the current state of mental health.

Many people are energized about political and social issues, there are new fields evolving for work and study, it is an exciting time.

But several of the converging trends discussed here may make some people more vulnerable to mental health problems, and some may exacerbate existing problems.

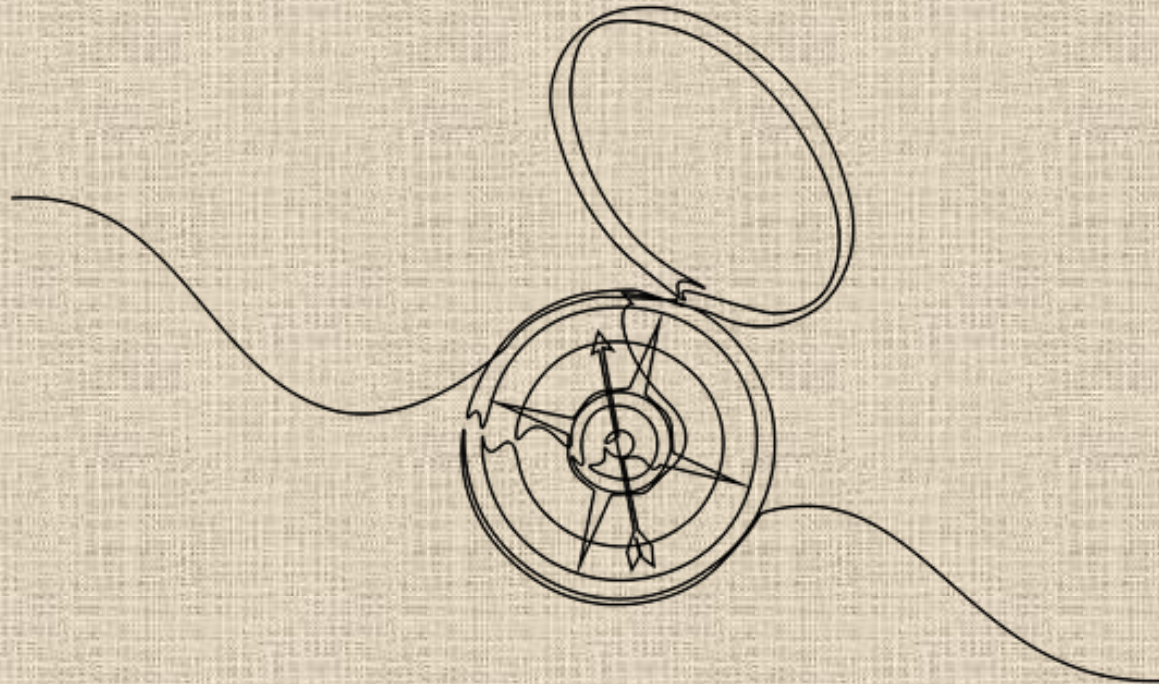


Conclusion

Several of the risk areas discussed are new and evolving.

In many ways, we are in uncharted waters in trying to anticipate and mitigate potential adverse mental health impacts of emerging risks, like AI and climate change.

It will be important for all of us to be aware of the shifting landscape and be mindful of the mental health consequences of these and other evolving trends.



thank you

For More Information

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