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Suicide is Common Modern Problem

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Suicide is the act of intentionally causing one's own death. Mental disorders (including depression, bipolar disorder, schizophrenia, personality disorders, anxiety disorders), physical disorders (such as chronic fatigue syndrome), and substance abuse (including alcoholism and the use of and withdrawal from benzodiazepines) are risk factors. Some suicides are impulsive acts due to stress (such as from financial or academic difficulties), relationship problems (such as breakups or divorces), or harassment and bullying. Those who have previously attempted suicide are at a higher risk for future attempts. Effective suicide prevention efforts include limiting access to methods of suicide such as firearms, drugs, and poisons; treating mental disorders and substance abuse; careful media reporting about suicide; and improving economic conditions. Although crisis hotlines are common resources, their effectiveness has not been well studied.

The most commonly adopted method of suicide varies from country to country and is partly related to the availability of effective means. Common methods of suicide include hanging, pesticide poisoning, and firearms Suicides resulted in 828,000 deaths globally in 2015, an increase from 712,000 deaths in 1990 [*inconsistent*]. This makes suicide the 10th leading cause of death worldwide

Approximately 1.5% of all deaths worldwide are by suicide. In a given year, this is roughly 12 per 100,000 people. Rates of suicide are generally higher among men than women, ranging from 1.5 times higher in the developing world to 3.5 times higher in the developed world. Suicide is generally most common among those over the age of 70; however, in certain countries, those aged between 15 and 30 are at the highest risk. Europe had the highest rates of suicide by region in 2015. There are an estimated 10 to 20 million non-fatal attempted suicides every year. Non-fatal suicide attempts may lead to injury and long-term disabilities. In the Western world, attempts are more common among young people and women.

Views on suicide have been influenced by broad existential themes such as religion, honor, and the meaning of life. The Abrahamic religions traditionally consider suicide as an offense towards God due to the belief in the sanctity of life. During the samurai era in Japan, a form of suicide known as seppuku was respected as a means of making up for failure or as a form of protest. Sati, a practice outlawed by the British in India, expected a Hindu widow to immolate herself on her husband's funeral pyre, either willingly or under pressure from her family and society. Suicide and attempted suicide, while previously illegal, are no longer so in most Western countries. It remains a criminal offense in some countries. In the 20th and 21st centuries, suicide has been used on rare occasions as a form of protest, and kamikaze and suicide bombings have been used as a military or terrorist tactic. Suicide is often seen as a major catastrophe for families, relatives, and other nearby supporters, and it is viewed negatively almost everywhere around the world.

Suicide, derived from Latin *suicidium*, is "the act of taking one's own life". Attempted suicide or non-fatal suicidal behavior amounts to self-injury with at least some desire to end one's life that does not result in death. Assisted suicide occurs when one individual helps another bring about their own death indirectly via providing either advice or the means to the end. This is in contrast to euthanasia, where another person takes a more active role in bringing about a person's death. Suicidal ideation is

thoughts of ending one's life but not taking any active efforts to do so. It may or may not involve exact planning or intent. In a murder–suicide (or homicide–suicide), the individual aims at taking the lives of others at the same time. A special case of this is extended suicide, where the murder is motivated by seeing the murdered persons as an extension of their self. Suicide in which the reason is that the person feels that they are not part of society is known as egoistic suicide.

In 2011, the Centre for Suicide Prevention in Canada found that the normal verb in scholarly research and journalism for the act of suicide was *commit*. On the other hand, the American Psychological Association lists "committed suicide" as a term to avoid because it "frame[s] suicide as a crime".Some advocacy groups recommend using the terms *took his/her own life*, *died by suicide*, or *killed him/herself* instead of *committed suicide*. The Associated Press Stylebook recommends avoiding "committed suicide" except in direct quotes from authorities. The *Guardian* and *Observer* style guides deprecate the use of "committed", as does CNN. Opponents of *commit* argue that it implies that suicide is criminal, sinful, or morally wrong.

Factors that affect the risk of suicide include mental disorders, drug misuse, psychological states, cultural, family and social situations, genetics, experiences of trauma or loss, and nihilism. Mental disorders and substance misuse frequently co-exist. Other risk factors include having previously attempted suicide, the ready availability of a means to take one's life, a family history of suicide, or the presence of traumatic brain injury. For example, suicide rates have been found to be greater in households with firearms than those without them.

Socio-economic problems such as unemployment, poverty, homelessness, and discrimination may trigger suicidal thoughts. Suicide might be rarer in societies with high social cohesion and moral objections against suicide. About 15–40% of people leave a suicide note. War veterans have a higher risk of suicide due in part to higher rates of mental illness, such as post-traumatic stress disorder, and physical health problems related to war. Genetics appears to account for between 38% and 55% of suicidal behaviors. Suicides may also occur as a local cluster of cases.

Most research does not distinguish between risk factors that lead to thinking about suicide and risk factors that lead to suicide attempts. Risks for suicide attempt rather than just thoughts of suicide include a high pain tolerance and a reduced fear of death

Mental illness

Mental illness is present at the time of suicide 27% to more than 90% of the time. Of those who have been hospitalized for suicidal behavior, the lifetime risk of suicide is 8.6%. Comparatively, non-suicidal people hospitalized for affective disorders have a 4% lifetime risk of suicide. Half of all people who die by suicide may have major depressive disorder; having this or one of the other mood disorders such as bipolar disorder increases the risk of suicide 20-fold. Other conditions implicated include schizophrenia (14%), personality disorders (8%), obsessive–compulsive disorder, and post-traumatic stress disorder. Those with autism also attempt and consider suicide more frequently.

Others estimate that about half of people who die by suicide could be diagnosed with a personality disorder, with borderline personality disorder being the most common. About 5% of people with schizophrenia die of suicide. Eating disorders are another high risk condition. Around 22% to 50% of people suffering with gender dysphoria have attempted suicide, however this greatly varies by region.

Among approximately 80% of suicides, the individual has seen a physician within the year before their death, including 45% within the prior month. Approximately 25–40% of those who died by suicide had contact with mental health services in the prior year. Antidepressants of the SSRI class appear to increase the frequency of suicide among children but do not change the risk among adults. An unwillingness to get help for mental health problems also increases the risk.

Previous attempts

A previous history of suicide attempts is the most accurate predictor of suicide. Approximately 20% of suicides have had a previous attempt, and of those who have attempted suicide, 1% die by suicide within a yearand more than 5% die by suicide within 10 years.

Self-harm

Non-suicidal self-harm is common with 18% of people engaging in self-harm over the course of their life. Acts of self-harm are not usually suicide attempts and most who self-harm are not at high risk of suicide. Some who self-harm, however, do still end their life by suicide, and risk for self-harm and suicide may overlap. Individuals who have been identified as self-harming after being admitted to hospital are 68% (38–105%) more likely to die by suicide.

Psychosocial factors

A number of psychological factors increase the risk of suicide including: hopelessness, loss of pleasure in life, depression, anxiousness, agitation, rigid thinking, rumination, thought suppression, and poor coping skills. A poor ability to solve problems, the loss of abilities one used to have, and poor impulse control also play a role. In older adults, the perception of being a burden to others is important. Those who have never married are also at greater risk. Recent life stresses, such as a loss of a family member or friend or the loss of a job, might be a contributing factor.

Certain personality factors, especially high levels of neuroticism and introvertedness, have been associated with suicide. This might lead to people who are isolated and sensitive to distress to be more likely to attempt suicide. On the other hand, optimism has been shown to have a protective effect. Other psychological risk factors include having few reasons for living and feeling trapped in a stressful situation. Changes to the stress response system in the brain might be altered during suicidal states. Specifically, changes in the polyamine system and hypothalamic–pituitary–adrenal axis.

Social isolation and the lack of social support has been associated with an increased risk of suicide. Poverty is also a factor, with heightened relative poverty compared to those around a person increasing suicide risk. Over 200,000 farmers in India have died by suicide since 1997, partly due to issues of debt. In China, suicide is three times as likely in rural regions as urban ones, partly, it is believed, due to financial difficulties in this area of the country.

The time of year may also affect suicide rates. There appears to be a decrease around Christmas, but an increase in rates during spring and summer, which might be related to exposure to sunshine. Another study found that the risk may be greater for males on their birthday.

Being religious may reduce one's risk of suicide while beliefs that suicide is noble may increase it. This has been attributed to the negative stance many religions take against suicide and to the greater connectedness religion may give. Muslims, among religious people, appear to have a lower rate of suicide; however, the data supporting this is not strong. There does not appear to be a difference in rates of attempted suicide. Young women in the Middle East may have higher rates.

Substance misuse

Substance misuse is the second most common risk factor for suicide after major depression and bipolar disorder. Both chronic substance misuse as well as acute intoxication are associated. When combined with personal grief, such as bereavement, the risk is further increased. Substance misuse is also associated with mental health disorders.

Most people are under the influence of sedative-hypnotic drugs (such as alcohol or benzodiazepines) when they die by suicide, with alcoholism present in between 15% and 61% of cases. Use of prescribed benzodiazepines is associated with an increased rate of suicide and attempted suicide. The pro-suicidal effects of benzodiazepines are suspected to be due to a psychiatric disturbance caused by side effects, such as disinhibition, or withdrawal symptoms. Countries that have higher rates of alcohol use and a greater density of bars generally also have higher rates of suicide. About 2.2–3.4% of those who have been treated for alcoholism at some point in their life die by suicide. Alcoholics who attempt suicide are usually male, older, and have tried to take their own lives in the past.

Between 3 and 35% of deaths among those who use heroin are due to suicide (approximately fourteen fold greater than those who do not use). In adolescents who misuse alcohol, neurological and psychological dysfunctions may contribute to the increased risk of suicide.

The misuse of cocaine and methamphetamine has a high correlation with suicide. In those who use cocaine, the risk is greatest during the withdrawal phase. Those who used inhalants are also at significant risk with around 20% attempting suicide at some point and more than 65% considering it. Smoking cigarettes is associated with risk of suicide. There is little evidence as to why this association exists; however, it has been hypothesized that those who are predisposed to smoking are also predisposed to suicide, that smoking causes health problems which subsequently make people want to end their life, and that smoking affects brain chemistry causing a propensity for suicide. Cannabis, however, does not appear to independently increase the risk.

Medical conditions

There is an association between suicidality and physical health problems such as chronic pain, traumatic brain injury, cancer, chronic fatigue syndrome, kidney failure (requiring hemodialysis), HIV, and systemic lupus erythematosus. The diagnosis of cancer approximately doubles the subsequent frequency of suicide. The prevalence of increased suicidality persisted after adjusting for depressive illness and alcohol abuse. Among people with more than one medical condition the frequency was particularly high. In Japan, health problems are listed as the primary justification for suicide.

Sleep disturbances, such as insomnia and sleep apnea, are risk factors for depression and suicide. In some instances, the sleep disturbances may be a risk factor independent of depression. A number of other medical conditions may present with symptoms similar to mood disorders, including hypothyroidism, Alzheimer's, brain tumors, systemic lupus erythematosus, and adverse effects from a number of medications (such as beta blockers and steroids).

Other factors

Trauma is a risk factor for suicidality in both children and adults. Some may take their own lives to escape bullying or prejudice. A history of childhood sexual abuse and time spent in foster care are also risk factors. Sexual abuse is believed to contribute to approximately 20% of the overall risk. Significant adversity early in life has a negative effect on problem-solving skills and memory, both of which are implicated in suicidality.

Problem gambling is associated with increased suicidal ideation and attempts compared to the general population. Between 12 and 24% of pathological gamblers attempt suicide. The rate of suicide among their spouses is three times greater than that of the general population. Other factors that increase the risk in problem gamblers include concomitant mental illness, alcohol, and drug misuse.

Genetics might influence rates of suicide. A family history of suicide, especially in the mother, affects children more than adolescents or adults. Adoption studies have shown that this is the case for biological relatives, but not adopted relatives. This makes familial risk factors unlikely to be due to imitation. Once mental disorders are accounted for, the estimated heritability rate is 36% for suicidal ideation and 17% for suicide attempts. An evolutionary explanation for suicide is that it may improve inclusive fitness. This may occur if the person dying by suicide cannot have more children and takes resources away from relatives by staying alive. An objection is that deaths by healthy adolescents likely do not increase inclusive fitness. Adaptation to a very different ancestral environment may be maladaptive in the current one.

Infection by the parasite *Toxoplasma gondii*, more commonly known as toxoplasmosis, has been linked with suicide risk. One explanation states that this is caused by altered neurotransmitter activity due to the immunological response.

There appears to be a link between air pollution and depression and suicide.

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Pathophysiology

There is no known unifying underlying pathophysiology for suicide; it is believed to result from interplay of behavioral, socio-economic and psychological factors.

Low levels of brain-derived neurotrophic factor (BDNF) are both directly associated with suicide and indirectly associated through its role in major depression, posttraumatic stress disorder, schizophrenia and obsessive–compulsive disorder. Post-mortem studies have found reduced levels of BDNF in the hippocampus and prefrontal cortex, in those with and without psychiatric conditions. Serotonin, a brain neurotransmitter, is believed to be low in those who die by suicide. This is partly based on evidence of increased levels of 5-HT2A receptors found after death. Other evidence includes reduced levels of a breakdown product of serotonin, 5-hydroxyindoleacetic acid, in the cerebral spinal fluid. However, direct evidence is hard to obtain. Epigenetics, the study of changes in genetic expression in response to environmental factors which do not alter the underlying DNA, is also believed to play a role in determining suicide risk.

Mental illness

In those with mental health problems, a number of treatments may reduce the risk of suicide. Those who are actively suicidal may be admitted to psychiatric care either voluntarily or involuntarily. Possessions that may be used to harm one are typically removed. Some clinicians get patients to sign suicide prevention contracts where they agree to not harm themselves if released. However, evidence does not support a significant effect from this practice. If a person is at low risk, outpatient mental health treatment may be arranged. Short-term hospitalization has not been found to be more effective than community care for improving outcomes in those with borderline personality disorder who are chronically suicidal.

There is tentative evidence that psychotherapy, specifically dialectical behaviour therapy, reduces suicidality in adolescents as well as in those with borderline personality disorder. It may also be useful in decreasing suicide attempts in adults at high risk. However, a decrease in suicide has not been observed.

There is controversy around the benefit-versus-harm of antidepressants. In young persons, some antidepressants, such as SSRIs, appear to increase the risk of suicidality from 25 per 1000 to 40 per 1000. In older persons, however, they may decrease the risk. Lithium appears effective at lowering the risk in those with bipolar disorder and major depression to nearly the same levels as that of the general population. Clozapine may decrease the thoughts of suicide in some people with schizophrenia. Ketamine, which is a dissociative anaesthetic, seems to lower the rate of suicidal ideation. In the United States, health professionals are legally required to take reasonable steps to try to prevent suicide.

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