International Journal of Advances in Scientific Research
ISSN: 2395-3616 (Online)
Journal DOI: https://doi.org/10.7439/ijasr **Review Article**

A review on theoretical models of suicide

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***Article History:**
Received: 09/08/2017
Revised: 21/09/2017
Accepted: 27/09/2017
DOI: https://doi.org/10.7439/ijasr.v3i9.4382

Abstract

Suicide is a major public health issue which is highly complex and multifaceted. Subsequently, after the pioneering work of Durkheim and Freud, researchers and scholars have attempted to explain the biological, social, and psychological nature of suicide. The present work presents an overview of different theoretical models underlying the development of suicidal behaviour. Hence the theory components will be a better understanding of the causal mechanisms of suicide and it will lead to improving the intervention strategies for suicidal behaviours.

Keywords: Suicide, suicidal behaviours, biopsychosocial, public health.

1. Introduction

Suicide is a major public health threat and the World Health Organization estimates that annually about 800 000 people worldwide complete suicide [1]. There are researchers focusing on suicide and related issues. In the face of the considerable research on suicide and suicidal behavior and its correlates, there have been a small number of efforts to fit the established data into a coherent overarching theory and available literature in the field. Suicidal behaviors are not isolated acts but a spectrum of activities related to a variety of risk factors. Thus, to form a useful theory of suicide, researchers need to go beyond associations of suicide behaviors and focus on causal mechanisms [2,3]. The aim of the present study was to review the predominant theoretical models of suicidal phenomena which we believe have made important contributions to the field. We focused on contemporary models based on available theories that address the biological, psychosocial, sociological and other models are underlying the development of suicidal behavior and risks.

2. Suicide

The word suicide originated from Latin words SUI (of oneself) and CAEDERE (to kill) in the 17th century.. The word "suicide" was first used by Sir Thomas Browne- an English physician and philosopher in 1642 in his book "Releglo Medici".

Suicide is defined as an act of intentionally terminating one's own life. However, this definition does not do justice to the complexity of the concept and the numerous usages of terms across studies. Thus the nomenclature for suicidal ideation and behavior has been the subject of considerable international attention and debate. The nomenclature of suicide behaviors without fatal outcome varies as well. Sometimes they are referred to as "suicidality" while others term these as "suicide-related behaviors" or "suicidal behavior"[4].

Definitions of suicidal thoughts and behavior developed by O'Carroll et al. and adopted by the Institute of Medicine is the most accepted definition and suicidal ideation refers to thoughts of harming or killing oneself [5,6].

Attempted suicide is a non-fatal, self-inflicted destructive act with explicit or inferred intent to die. A suicide attempt should possess the following characteristics: (a) self-initiated, potentially injurious behavior; (b) presence of intent to die; and (c) nonfatal outcome.

Suicidal behavior may include acts of self-harm with a fatal (suicide) or a nonfatal (attempted suicide) outcome, Suicidal behavior is defined as a set of non-continuous and heterogeneous spectra of behavior which includes, suicidal ideation, threats, gestures, self-cutting, low lethal suicide attempts, interrupted suicidal attempt, near-fatal suicide attempt and actual suicide [7].

Suicide (sometimes referred to as "completed suicide") defined as "death arising from an act inflicted upon oneself with the intent to kill oneself. Although that definition might seem quite straightforward, its implementation requires that two judgments be made: (a) that the death was self-inflicted and not caused by someone or something else; and (b) that the deceased person intended his or her actions to result in death. It is that second judgment that poses the greatest difficulties for researchers, coroners, and medical examiners [8].

Parasuicide is a widely used term in Europe, where it is often preferred over "suicide attempt." Parasuicide typically refers to the full range of nonfatal suicidal behaviors, regardless of the level of suicidal intent or the extent of medical injury [9].

Suicidality refers to all suicide-related behaviors and thoughts including completing or attempting suicide,suicidal ideation or communications.

The spectrum of Suicidality: It ranges from suicidal ideation to suicidal behavior, with passive thoughts of death and completed suicide representing extreme ends of the risk spectrum [10].

Self-mutilation is another related class of self-destructive behaviors, considered by some to fall within the Parasuicide domain but probably best conceptualized as a distinct phenomenon. In self-mutilation, there is self-destructive behavior performed on one's own body. In rare instances among psychotic patients, self-mutilation can be very severe (e.g., cutting off of a limb). A stereotypic form of repetitive self-injury is associated with mental retardation and autistic disorders [11].

Theories of suicide cover diverse perspectives including social, biological, psychodynamic, cognitive-behavioral, and developmental etiologies. Biological theories propose that suicidal behavior results from the dual presence of a biologically-based diathesis (such as dysregulation of the serotonergic system in the ventromedial prefrontal cortex) and an activating psychosocial stressor. Psychodynamic theories propose that suicide is caused by unconscious drives, intense affective states, desire for escape from psychological pain, existential drives for meaning, and disturbed attachment. Cognitive-behavioral theories postulate causal roles for hopelessness, the suicidal cognitive mode, autobiographical memory deficits, perceptions of entrapment, and emotion dysregulation. Developmental theories posit causal roles for disturbed social forces and family systems. Individuals who die by suicide present with numerous risk (actors, rather than a single risk factor in isolation. Thus, theories of suicide should be able to account for the diverse range of factors associated with suicidal behavior.

3. Biological Models

Some models of the development of suicidal behavior rely entirely on biological processes as explanatory factors while others include biological processes as one of the several determinants. Those that focus entirely on biology include [12].

3.1) Brain serotonergic system

Serotonin (5-HT) indices: Serotonin is formed by neurons integrated into the midline raphe nuclei in the brainstem with widespread targets that appear to be topographically organized. The neurotransmission of serotonin is regulated by a network of pre- and post-synaptic receptors and the 5-HT transporter (5-HTT). The available data from clinical and post-mortem studies suggest that reduced serotonergic input constitutes a critical element in the vulnerability to suicidal behavior, irrespective of the associated psychiatric illness. Post-mortem studies using 5HTT autoradiography with the specific 5-HT transporter ligand, cyano imipramine, demonstrate reduced 5-HT transporter binding in the PFC (Pre Frontal Cortex) of suicide and raise the possibility that there are reduced serotonergic innervation. Low levels of 5-hydroxyindoleacetic acid (5-HIAA) are found on Cerebrospinal fluid (CSF) of depressed persons who attempted suicide and in the brainstems of persons committing suicides. This proves that there is a decrease in neurotransmission of serotonin in the brain of suicidal patients [13, 14].

Neuronal tryptophan hydroxylase in suicide: Tryptophan hydroxylase (TPH) 1&2, catalyzes the synthesis of serotonin. Amongst TPH1 is broadly expressed and TPH2 is neuron specific. TPH2 is involved in the conversion of amino acid tryptophan to 5-hydroxytryptophan (5-HTP) and subsequent decarboxylation into 5-hydroxytryptamine (5-HT).TPH2 is a critical component in the determination of the amount of brain 5-HT synthesized in vivo. Deficits in TPH2 amount or its activity may result in aberrant 5-HT production leading to behavioral changes. The higher amount of TPH indicates an up-regulatory homeostatic response to an impaired 5-HT release or less serotonergic autoreceptor activation. Alternatively, the serotonin impairment in suicide may be due to hypofunctional serotonin synthesizing enzyme[13,14].

5-HT receptors and 5-HT transporter in suicide: The 5-HT receptor is a G protein-coupled receptor that is expressed at pre- and postsynaptic sites. Various psychiatric disorders such as major depression, anxiety, and suicide have shown dysfunction of the 5-HT receptor in its pathology. In the dorsal raphe nuclei (DRN), the 5-HT receptor functions as a somatodendritic inhibitory autoreceptor on 5-HT neurons. Greater autoinhibition of the 5-HT receptor in the brainstem raphe nuclei may be a mechanism that contributes to reduced serotonergic neurotransmission in the PFC in the context of suicide and depression. Post-mortem studies have shown elevated levels of 5-HT autoreceptor level in the midbrain of persons who committed suicide[13,14].

5HIAA: Low CSF 5-HIAA has been associated with impulsive, externally directed aggression has been observed in impulsive murders [15, 16]. This relationship between impulsivity and reduced serotonergic function led to the hypothesis that serotonergic function supports a restraint mechanism and a deficiency of serotonergic function results in greater impulsivity and aggression including the self-directed aggression of suicidal behavior [17]. Of note, a large clinical study by Baca-Garcia et al., showed an inverse relationship between impulsivity and lethality of suicide attempts, perhaps due to poorer planning capacity. Impulsivity may relate to the likelihood of suicidal behavior but not necessarily its lethality [18].

Neuroendocrine challenges have also been used to understand the role of serotonin in suicide. Fenfluramine, the most commonly used serotonin challenge agent, causes the release of serotonin from pre-synaptic storage granules, inhibits its reuptake, and may also stimulate post-synaptic serotonin receptors [19]. The serotonergic activation leads to a dose-dependent increase in prolactin [20]. Decreased prolactin responses are believed to reflect reduced serotonergic activity. Blunted prolactin responses to fenfluramine challenge have been observed in patients with major depression and a history of suicidal behavior [21]. Correa *et al*, found significantly lower prolactin responses to fenfluramine challenge in a psychiatric patient with a history of attempted suicide compared with healthy controls and patients without such a history, and propose that the blunted serotonergic response may represent a marker for suicidality specifically, rather than depression [22].

3.2) Brain noradrenergic system

Norepinephrine: Catecholaminergic dysfunction has been hypothesized to play a role in suicide based on several observations. A high concentration of norepinephrine (NE) with decreased alpha2-adrenergic bindings has been observed in the prefrontal cortex of suicide victims.Higher norepinephrine concentrations have been reported to be associated with higher levels of aggression [17, 23, 24].

3.3) Dopaminergic system

Low CSF homovanillic acid (HVA) is found in suicide attempters that have been diagnosed with major depression, and the dopamine system seems to be hypofunctional in major depression. Neuroendocrine studies of dopamine function and suicidal behavior arc inconclusive [17].

3.4) HPA axis hyperactivity

The hypothalamic-pituitary-adrenal (HPA) axis is the neuroendocrine system that regulates the body's response to stress and has complex interactions with brain serotonergic, noradrenergic, and dopaminergic systems. Stress results in the release of the corticotrophin-releasing hormone (CRH). CRH activates the HPA axis by stimulating the release of adrenocorticotropin (ACTH) from the pituitary. These events lead to the release of corticosteroids from adrenal glands and subsequent behavioral changes [25]. Some, but not all, studies indicate that suicidal behavior may be associated with hyperactivity of the HPA axis. These studies indicate higher Cortisol levels after dexamethasone suppression (a clinical measure of HPA axis hyperactivity) and HPA axis hyperactivity at baseline levels may increase the risk of eventual suicide by as much as 14-fold [26, 27]. Further evidence for the role of the HPA axis in suicide is provided by the association of suicide with larger adrenal glands and less prefrontal cortical CRH binding [17].

3.5) BDNF

Brain-derived neurotrophic factor (BDNF) is reduced and activation and expression of tropomyosin receptor kinase B (TrkB), to which BDNF binds and mediates its functions, are lower in the suicide brain. It indicates a possible deficit in the functioning of BDNF in suicidal patients [14].

3.6) Others

Cholesterol levels: There is a small increase in the rate of suicide, and perhaps suicide attempts and ideation, in people with very low cholesterol levels and after lowering of cholesterol through the diet [28].

Serotonin also mediates a number of platelet functions, some of which are altered in suicide attempters. Upregulation of 5-HT2A receptors on the platelets of suicide attempters correlates with the severity of the most recent suicide attempt. A significant positive correlation between platelet serotonin transporter density and anger scores and a negative correlation between platelet count and trait anxiety were observed in a suicidal versus a non-suicidal group of adolescent inpatients [29].

4. Psychological models

4.1) Psychodynamic Models

Freud referred to "retroflexed rage" inherent in suicidal behavior, that is, the redirecting toward oneself of an aggressive impulse that was initially focused on a significant other (e.g., parent, lover) i.e., hostile aggression turned inward [30].

It is proposed that suicide is caused by unconscious drives. Menninger postulated that all suicides encompass three motivations: a wish to kill, particularly to kill loved ones; a wish to be killed, associated with guilt for having the murderous urges; and a wish to die (i.e., depression and hopelessness arising from such factors as self-hate and habitual restrictions on aggressive impulses) [31].

4.2) Cognitive Models

Beck and colleagues proposed that the diathesis for depressive and suicidal symptoms consists of cognitive self-schemas that contain certain negative beliefs, including dysfunctional attitudes and cognitive distortions. An example is an individual who, after making a single small error at a public-speaking event, becomes convinced that everyone in attendance thinks he is stupid. Hopelessness plays a key role in Beck's model, along with the negative triad of negative thoughts about oneself, others, and the future [32]. They argue that, like other depressed individuals, suicidal persons misconstrue their situation in negative ways. But the suicidal person is hopeless about the situation, hence looks at suicidal behavior as the only possible solution.

Rudd provided a detailed account of the "suicidal mode," in which the triggering of negative beliefs and cognitions is accompanied by the activation of particular systems of affective, physiological, and behavioral-motivational responses associated with suicidality. He gives an account of "Compensatory strategies" that arise to come up with the negative beliefs and rules of an individual. The effective component of the suicidal mode encompasses a variety of mixed dysphoric emotions that might arise depending on the particular beliefs endorsed by an individual: shame, guilt, sadness, anger, and so forth. The behavioral system connotes a predisposition toward engaging in suicide-related behaviors, including planning, rehearsals, and suicide attempts. The physiological system involves patterns of physiological activation that characterize the suicidal mode [33].

Orbach hypothesized suicidal individuals are characterized by a disposition toward dissociation manifested in relative insensitivity to physical pain and indifference to their bodies. He suggested that certain stress conditions lead to the development of dissociative tendencies and that once these tendencies are established, they become an integral part of suicidal behavior. Psychological variables that affect pain tolerance are presented and they include perception, motivation, emotions, and behavioral and cognitive strategies of pain control. These can increase tolerance of pain in suicidal individuals, making the suicidal act possible. The specific relationships of pain and suicide arc then introduced through an examination of pain analgesia in the phenomenon of self-harm. He states that continuous stress leads to the simultaneous development of dissociative tendencies (including indifference to the body and pain) and heightened vulnerability to stress. These dispositions may facilitate suicidal behavior in the face of mounting intolerable stress, helplessness, and hopelessness [34].

According to Marsha Linehan, suicidal persons are viewed as lacking sufficient skills in two main areas: the ability to accept their experiences fully and completely and the "skillful means" to regulate impulsive and self-destructive emotions and to be effective in interpersonal interactions. Examples of skill deficits include difficulty tolerating emotional distress and excessive passivity [35].

Mark and Williams argued that suicidal behaviors can be understood as a cry of pain, stemming from a sense of "entrapment." Suicidal behavior is motivated not by a wish to die but rather by a wish to escape the trap. The trap frequently springs from one's own mental images, thoughts, and memories, which may become reactivated in the form of cognition and emotions that absorb one’s attention before the individual barely becomes conscious of them [36].

Williams suggested; suicidal individuals lack autobiographical memories. It is cognitive ability to retrieve specific autobiographical memory. Persons who are deficient produce more general memories thus they have a smaller repertoire of experience to draw upon & fewer effective solutions when faced with a crisis. Arie *et al*, supported Williams notion and they found generalized autobiographical memory is associated with deficits in interpersonal problem solving, negative life events hopelessness & suicidal behavior [37, 38].

4.3) Social-learning models

These suggest dial suicidal behavior can be learned or promoted through direct or indirect exposure to people who haw suicidal behavior. An example of this model might be suicide "cluster." which the Center for Disease Control and Prevention defines as a group of suicides or suicide attempts that occur close together in time and space than would normally be expected. Clusters are primarily a phenomenon among teenager and young adults through age 24, occurring only rarely beyond that age [39].

4.4) Psychological and interpersonal model

These models use both internal psychological processes and interpersonal dynamics in describing and

explaining suicidal behavior. David Jobes and colleagues described two classes of suicidal individuals:

a) Those with an 'intrapsychic" orientation are focused on their psychological distress, are less drawn to seek treatment than others, lend to be disproportionately male, and may be at higher risk for completed suicide than attempted suicide
b) Those with "intrapsychic" orientation tend to be females, who are more oriented toward the relational aspects of (heir problems, more likely to seek treatment, and at higher risk for attempted than completed suicide [40].

Joiner (2006) developed an "Interpersonal-Psychological" theory of attempted and completed suicide. Briefly, according to the theory, the meat dangerous form of suicidal desire is caused by the simultaneous presence of two interpersonal constructs—thwarted belongingness (I am alone) and perceived burdensomeness (I am a burden)—and further that the capability to engage in suicidal behavior is separate and completed suicide.

According to Joiner there are three necessary elements in every serious suicide attempt or completed suicide, which are:

An acquired ability to enact lethal self-injury. Because committing suicide can be terrifying and painful, it requires a certain level of competence and courage, as well as habituation to pain. That is in order to enact lethal self-harm, an individual must habituate to physical pain and the fear of death.

A sense of being burdensome to important others. This does not only include perceptions of being burdensome, but perceived ineffectiveness and negative views of oneself as well.

A lack of a sense of belonging or connection with a valued relationship or a group. This can lead to a feeling of being isolated and disconnected, which appears to be an important component of the suicidal mind state [41].

5. Sociological model

Emile Durkheim categorized suicides into four basic types each of which is described by the extent to which individuals were integrated and regulated by the constraining moral forces of society. Egoistic and altruistic suicide arose from the respective under-integration and over-integration of the individual by society. Anomic suicide and fatalistic suicide respectively caused by under-regulation and over-regulation in the society[42].

5.1) ***Egoistic suicide:*** Low Integration into society

This type of suicide occurs when the degree of social integration is low. Individual experiences a sense of meaninglessness, these individuals are internalized into the self-E.g.: Unmarried individuals have higher rates of suicide than married people.

5.2) ***Altruistic suicide:*** High Integration into society

When social integration is loo strong, the individual is literally forced into committing suicide. With Altruistic Suicide, death is deliverance. Altruistic suicide involves an individual whose sense of identity is subordinate to the group or community, and the suicide may represent a sacrifice for the good of the community. E.g.: - policeman dying in the line of duty, suicide bombing, Sati customs [43,44].

5.3) ***Anomic suicide:*** Low Regulation by society

This occurs in response to a crisis with which a person feels unable to cope and thus uses suicide as a solution. Durkheim introduced the term "anomie" to refer to a societal condition in which pre-existing norms no longer control behavior because of rapid societal change. The crisis arises because the person is left alone to deal with change, without the benefit of guidance by social convention. E.g.: Suicide from great loss (lay-off)

5.4) ***Fatalistic Suicide:*** High Regulation by society

The individual perceives that his life is, or will be, so restricted by a societal situation that there is no point to living. A person who hangs himself in prison is generally an example of such a suicide.

Although Durkheim's theory of suicide has contributed much to the understanding of the phenomenon because of his stress on social rather than on biological or personal factors, the main drawback of the theory is that he has laid too much stress only on one factor, namely social factor and had forgotten or undermined other factors, thereby making his theory defective and only one-sided[45].

6. Psychosocial model

Shneidman's psychache theory involves the proposals that the simultaneous presence of three factors is necessary for lethal suicidal behavior to occur psychache or pain, press, and perturbation.

- "Pain" refers to the individual's subjective experience of emotional suffering. Shneidman coined the term "psychache" to describe an intense emotional pain that he believes it suffered by all who commit suicide.
- "Press" involves external influences of any type, which can range from positive forces to overwhelmingly negative pressure.
- "Perturbation" refers to the person's level of emotional agitation, as well as cognitive constriction (narrowing of the scope of one's thoughts), which contribute to a propensity for impulsive and potentially lethal behaviors.

The presence of these factors will create the strongest, and most lethal, level of desire for suicide [46].

7. Biopsychosocial model

George Engel's observation that factors at the biological, psychological, and social levels are dynamically interrelated gave rise to the biopsychosocial approach. Several variants of this approach have been applied to suicidology [47].

Susan Blumenthal developed an "overlap" model in which five domains of biopsychosocial risk are conceptualized as circles, and those individuals at the intersection or all five are at highest risk. The five domains include:

a) Psychiatric disorders (e.g.. affective disorders, alcohol and substance abuse, schizophrenia)
b) Personality traits and disorders
c) Psychosocial and environmental factors such as recent major stresses and losses, exposure to suicide, and medical illness
d) Genetic predisposition toward suicide
e) Other biological factors such as decreased serotonin.

Blumenthal reasoned that those multiple domains may interact to lower the threshold for suicidal behavior, particularly if lethal means are available, but that protective factors (coping skills, hopefulness, social supports) can counteract the negative impact of risk factors [48].

8. Family models of suicide

Family models have centered primarily on the following areas:

a) Models that implicate poor family communication and problem-solving, including avoidant and hostile communication, at either the family-wide level or the parent-child dyadic level
b) Attachment theory: Attachment-related issues, including separations from or losses of parents, insecure attachment relationships may lead to suicidal behavior. Suicidal behavior, in some cases, is presumed to serve an attachment function by eliciting attentiveness from an attachment figure.
c) Psychopathology in the family, which may imply genetic transmission of suicidal behavior or suicidogenic factors or may serve to promote disturbed parent-child interactions [49, 50].

9. Stress-Diathesis Model of Suicidal Behavior

This model of suicidal behavior categories risk factors into proximal and distal and their interaction in the genesis of suicide [51]. All persons exposed to stress do not develop suicidal ideation, so this model proposes that there is a biological vulnerability, called diathesis, among individuals which predisposes individual to develop suicide when encountered with stress [14, 52].

Conceptually diathesis is a pre-dispositional factor or a set of factors which makes possible a disordered state to occur. It reflects a constitutional vulnerability to develop a disorder. The term has been used in a psychiatric context since the 1800s. Theories of schizophrenia brought the stress and diathesis concepts together and the particular terminology of diathesis-stress interaction was developed by Meehl, Bleuler, and Rosenthal in the 1960s. CCurrently, biological traits produced by genetic dispositions arc viewed as diathesis. However recently term "diathesis" has been broadened to include cognitive and social predispositions too that may make a person vulnerable to a disorder such as depression [14, 52].

9.1) Stress component

Psychosocial crises and psychiatric disorders may represent the stress component of stress-diathesis models of suicidal behavior. Poverty, unemployment, and social isolation, all are known to be implicated in suicide. Psychiatric disorders can lead to job loss, to the breakup of marriages or relationships, or to the failure to sustain such relationships. Moreover, psychiatric illness and psychosocial adversity often coalesce to increase stress on a person. Many studies have focused on state-dependent characteristics of psychiatric disorders, such as severity of depression, levels of hopelessness mental pain, and cognitive characteristics. Beck's theory of modes seems to offer a framework for conceptualizing suicidal behavior. Modes are defined as interconnected networks or cognitive, affective motivational, physiological, and behavioral schemata that are activated simultaneously by relevant environmental events and result in goal-directed behavior. Mental pain (or "psychache") appears to be emotional and motivational characteristics of meticulous significance in suicidal behavior[14, 52-54].

9.2) Diathesis component

Genetic effects, childhood abuse, and epigenetic effects may be implicated in the causation of the diathesis to suicidal behavior. Several studies have certainly shown that reported childhood adversity, such as deprivation and physical or sexual abuse, are risk factors for the development of depression and suicide in the later part of life. However, not all will develop psychopathology following exposure to childhood adversity, indicating the existence of a diathesis in some but not all individuals. Neuroanatomical, physiological, and genomic alterations are also contributors to the long-lasting detrimental effects. Presently available information’s imply that the diathesis to suicidal behavior is continuous. It becomes more marked during the course of the suicidal process that commonly predates completed suicide. Suicide many times preceded by nonfatal suicide attempts, which are commonly recurring with an increasing degree of medical severity, suicidal

intent, or lethality of the method used. Information provided by several studies support for a kindling effect on the occurrence of suicide attempts[14, 52].

9.3) Cognitive stress-diathesis model

According to Williams and Pollock diathesis for suicidal behavior has been described in cognitive psychological terms, in which suicidal behavior represents the response to circumstances that has three components:

- Sensitivity to signals of defeat: An involuntary hypersensitivity to stimuli signaling "loser" status increases the risk that the defeat response will be triggered.
- Perceived 'no escape': Limited problem-solving abilities may point towards the person that there is no escape from problems or life events.
- Perceived 'no rescue': The experience of suicidal behavior is associated with a restricted fluency to come with positive events that might happen in the future. This restricted fluency is reflected not only by the perception that there is no escape but also by the judgment that no rescue is possible in the future. So it is interesting to note mat the fluency of generating positive future events correlates inversely with levels of hopelessness, a core clinical predictor of suicidal behavior[14, 52, 55].

This model is also called as "cry of pain" model.

10. Clinical model

Aggression, impulsivity, and borderline personality disorder may be the result of genetic factors or early life experiences, including a history of physical or sexual abuse. These factors increase the risk of suicide. Psychopathology is necessary but not sufficient factor to account for suicide alone. For better clinical detection, stable risk factors which are present prior to the onset of psychopathology needs to be clarified. Impulsivity is in this context pointed more as a behavioral dimension than as the sudden or fast actions relating to an inability to hold out impulses. Impulsivity does not always include aggressive behaviors, but high levels of impulsivity correlate with high levels of aggression. A correlation between aggression, impulsivity, and hostility has been confirmed in suicide completers using psychological autopsy approaches[14, 52].

11. Conclusion

The factors associated with suicide are varied and complex which is not a disease, but it is a tragic endpoint of complex etiology and a leading cause of death worldwide [56]. Predicting who will take their life is extremely difficult. Different theories of suicide were able to account for the diverse range of factors associated with suicidal behavior. There are several characteristics of suicide, including a sense of unbearable psychological pain, a sense of isolation from others, lack of belonging, feeling trapped and hopeless and a burden on others and the perception that death is the only solution when the individual is temporarily not able to think clearly due to being blinded by overwhelming pain and suffering. There are several characteristics of suicide, including a sense of unbearable psychological pain, a sense of isolation from others, lack of belonging, feeling trapped and hopeless and a burden on others and the perception that death is the only solution when the individual is temporarily not able to think clearly due to being blinded by overwhelming pain and suffering. Some people have a mental health condition, although signs of the condition may not have seemed evident before the suicide. Therefore the theory components simultaneously will be a major contribution to the existing knowledge. A better understanding of the causal mechanisms will lead to improving intervention strategies.

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