

SPECIAL ARTICLE

Brazilian Psychiatric Association guidelines for the management of suicidal behavior. Part 1. Risk factors, protective factors, and assessment

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Suicide is a global public health problem that causes the loss of more than 800,000 lives each year, principally among young people. In Brazil, the average mortality rate attributable to suicide is approximately 5.23 per 100,000 population. Although many guidelines have been published for the management of suicidal behavior, to date, there are no recent guidelines based on the principles of evidence-based medicine that apply to the reality of suicide in Brazil. The objective of this work is to provide key guidelines for managing patients with suicidal behavior in Brazil. This project involved 11 Brazilian psychiatry professionals selected by the Psychiatric Emergencies Committee (Comissão de Emergências Psiquiátricas) of the Brazilian Psychiatric Association for their experience and knowledge in psychiatry and psychiatric emergencies. For the development of these guidelines, 79 articles were reviewed (from 5,362 initially collected and 755 abstracts). In this review, we present definitions, risk and protective factors, assessments, and an introduction to the Safety Plan. **Systematic review registry number:** CRD42020206517

Keywords: Suicide; completed suicide; suicide attempt; mental disorders; guideline

Introduction

Psychiatric emergencies are changes in behavior that place the patient or others at risk and require immediate therapeutic intervention (within minutes or a few hours) to avoid harmful progression. Among them are suicidal behavior, mood episodes, self-mutilation, severely impaired judgment, severe self-neglect, intoxication or abstinence, and aggressive psychomotor agitation.¹⁻⁵ According to the World Health Organization (WHO), suicide is a serious public health problem and one of the leading causes of death worldwide.⁶⁻⁸ Throughout the world, approximately 800,000 people die by suicide each year, accounting for 1.5% of all deaths.⁹ Suicide is the

10th leading cause of death in North America and the foremost cause of death worldwide among persons 15 to 24 years of age.^{10,11}

The WHO estimated that the 2016 suicide rate was 10.6 per 100,000 persons, with 80% of suicides occurring in low- and middle-income countries.^{6,8,10,11} Across the six WHO regions, the incidence of suicide differed by a factor of four between the region with the highest rate (Europe) and the region with the lowest rate (the Eastern Mediterranean, including the Middle East). Worldwide, suicide rates are higher in older people and among men (15.6 suicides per 100,000) than they are among women (7.0 per 100,000).^{6,11} In addition, suicide rates have been declining over time in most of these regions, and some

places did not reach the WHO estimate in 2020. Of total deaths by suicide, 84.7% occurred among 15-to-59-year-olds.⁶ Suicide also has profound implications for families and communities, and incurs massive societal costs estimated at over 93 billion dollars per year in the United States alone.¹²

In Brazil, 50,664 deaths from suicide were registered from 2010 to 2014, and the average suicide mortality rate was 5.23 per 100,000 population.¹³ The Brazilian municipalities with the highest rates were Taipas do Tocantins, state of Tocantins (79.68 deaths per 100,000 population); Itaporã, state of Mato Grosso do Sul (75.15 deaths per 100,000); Mampituba, state of Rio Grande do Sul (52.98 deaths per 100,000 population); Paranhos, state of Mato Grosso do Sul (52.41 deaths per 100,000); and Monjolos, state of Minas Gerais (52.08 deaths per 100,000).¹³

Although many guidelines have been published for the management of suicidal behavior, to date, there are no recent guidelines based on the principles of evidence-based medicine that apply to the reality of suicide in Brazil.

The objective of this study is to provide key guidelines for managing patients with suicidal behavior in Brazil.

Methods

This project involved 11 Brazilian psychiatry professionals selected by the Psychiatric Emergencies Committee (Comissão de Emergências Psiquiátricas) of the Brazilian Psychiatric Association for their experience and knowledge in psychiatry and psychiatric emergencies. For the development of these guidelines, the MEDLINE (via PubMed), Cochrane Database of Systematic Reviews, Web of Science, and SciELO databases were searched for articles published from 1997 to 2020 in English or Portuguese. The search strategy used was based on questions structured according to the PICO format ("patient or population," "intervention or exposure," "control or comparison," and "outcome"), as recommended by the Guidelines Project of the Brazilian Medical Association (AMB). The use of structured clinical questions aimed at facilitating the elaboration of strategies to search for evidence. The descriptors used were "suicide" OR "suicidal behavior" AND "risk factors" OR "protective factors" OR "assessment." Systematic reviews with meta-analysis were prioritized, and other types of research were only sought when the information was not found.

In evaluating the literature, despite a large number of clinical trials and reviews, some difficulties were found in evaluating the results: the evaluation of suicidal behavior in several different diagnoses, evaluation and follow-up of suicidal behavior in different settings, and evaluation of interventions in a small number of patients, with different instruments and outcome criteria. Therefore, the following criteria were standardized: 1) studies on suicidal behavior for adults (18 to 65 years); and 2) objective assessment of response, either by reduction of symptoms or by an objective scale. The exclusion criteria were as follows: 1) studies with fewer than 20 participants in the sample; 2) incomplete data and low-quality statistical analysis.

In addition, articles deemed to be relevant to the literature were also used in the development of the guidelines.

The article selection process proceeded as follows: i) selection of the relevant article summaries; ii) reading the relevant articles in full; iii) critical analysis of evidence; and iv) extraction of results and classification of evidence strength. Levels of evidence and grades of recommendations were selected according to the Oxford classification 2011. For more details, see <https://www.cebm.net/wp-content/uploads/2014/06/CEBM-Levels-of-Evidence-2.1.pdf>. In the text, we will present our recommendation grades, and in the descriptive table of the selected articles, we will present the levels of evidence. Of 5,362 entries initially retrieved and 755 abstracts on the drug approach, 79 articles were ultimately reviewed (Figure 1). Tables S1 and S2, available as online-only supplementary material, present details as well as the level of evidence of the selected articles.

Definitions

Definitions of suicidal behavior are highly variable, imprecise, and often changing, especially in regard to nonfatal suicidal behavior and suicidal ideation. Suicidality covers suicidal ideation (serious thoughts about taking one's own life), suicide plans, and suicide attempts. However, Meyer et al.¹⁴ proposed abandoning this term. This author suggests using suicide ideation, suicidal behavior, and suicide as the preferred terms.

In this guideline, we will standardize the terms as described in Box 1.

Risk factors

Risk factors for suicide have been investigated at the population and individual levels; in addition, predisposing factors and precipitating events have been examined, mainly at the individual level. Each of these factors can be mediated through genetic, psychological, and personality characteristics, making most explanatory models complex and difficult to interpret.¹⁰

Patients seeking care for suicidal behavior should undergo risk factor assessment to identify those who need intensive supervision and who should receive more clinical resources.¹⁶⁻¹⁹ Some authors propose that risk factors cannot be defined and identified in an isolated and precise manner, and that fatalities occur due to the sum of multiple variables.¹⁶ There is still little statistically robust evidence to justify the isolated use of these risk factors; therefore, in future, cohort studies using multivariable methodology should elucidate whether variables independently associated with suicide exist.¹⁶ Psychiatrists and other physicians must be careful not to reduce patient assessment to a search for specific information, and instead combine the patient's history with risk factors, protection, access to healthcare sources, motivations, and psychosocial support networks.¹⁹

The literature suggests an association between alleged high-risk factors and completed suicide.^{16,18-21} However, a meta-analysis found that approximately half of all suicides are likely to occur in low-risk groups, and that 95% of high-risk patients do not commit suicide. Therefore, these findings must be interpreted with caution.¹⁶

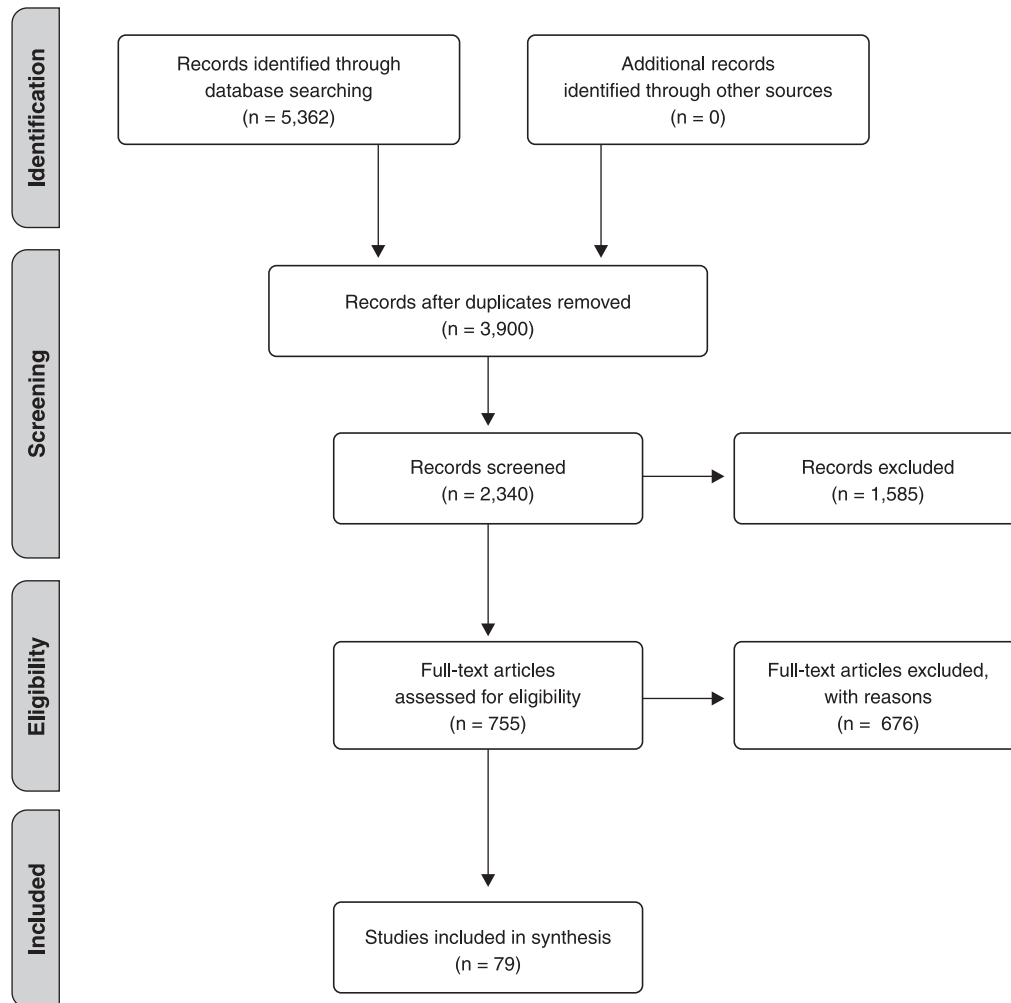


Figure 1 PRISMA flowchart for the study selection process.

Box 1 Main suicidal behavior terms suggested¹⁵

Completed suicide	A self-injurious behavior that resulted in fatality and was associated with at least some intent to die as a result of the act.
Preparatory acts toward imminent suicidal behavior (or suicide plan)	The individual takes steps to injure him- or herself, but is stopped by self or others from starting the self-injurious act before the potential for harm has begun.
Suicide attempt	A potentially self-injurious behavior, associated with at least some intent to die because of the act. Evidence that the individual intended to kill him- or herself, at least to some degree, can be explicit or inferred from the behavior or circumstance. A suicide attempt may or may not result in actual injury.
Suicidal ideation	Passive thoughts about wanting to be dead or active thoughts about killing oneself, not accompanied by preparatory behavior.

In another study, no factor or combination of factors was strongly associated with suicide in the year after discharge among patients who were hospitalized for suicidal behavior. Approximately 3% of patients categorized as being at high risk can be expected to commit suicide in the year after discharge, while approximately 60% of the patients who commit suicide are likely to be categorized as low risk.²²

It is important to point out that there are no universal risk factors, and that each of those observed in research were only detected after comparison to different variables. Tables 1 and 2 show the main risk factors identified to date. However, we emphasize that no single factor is predictive of attempted or completed suicide. Generally, the sum of several factors, in addition to symptomatic disease, is the trigger for the event. We present only risk

Table 1 Risk factors* for suicide attempt

Risk factor	Level of evidence
Acute alcohol use ²³	4
Affiliation and attachment ²⁴	1
Alcohol use ^{2,25}	3
Antidepressants in pediatric MDD, OCD, and anxiety disorders ²⁶	1
Antidepressants in short-term use, compared to placebo ²⁷	1
Anxiety ^{28,29,30}	1
Arousal ²⁴	1
<i>BDNF</i> polymorphism Val66Met in persons with psychiatric disorders ³¹	4
Bipolar disorder type II ³²	2
Bipolar disorder with female sex, younger age of illness onset, depressive polarity, comorbid anxiety disorder, any comorbid substance use disorder, alcohol use disorder, any illicit substance use, comorbid cluster B/borderline personality disorder, and first-degree family history of suicide	3
Body dysmorphic disorder	4
Bullying ³³	1
Child maltreatment ^{30,33}	4
Childhood sexual abuse ³³⁻³⁵	2
Chronic cannabis use ³⁶	4
Cognitive systems (e.g., impulsiveness, attention problems) ²⁴	1
Community violence ³³	4
Dating violence ³³	1
Depressed mood ^{24,37}	1
Depressive symptoms during first-episode psychosis ³⁸	1
Derangements of central serotonergic function ²⁴	1
Emotional abuse ³⁹	1
Exposure to self-injurious thoughts and behaviors of others (e.g., friends, family members, schoolmates, etc.) ⁴⁰	1
Family history of self-injurious thoughts and behaviors ⁴⁰	1
Frustrative nonreward ²⁴	1
Higher cortisol levels below age 40 years ⁴¹	4
Homosexuality or bisexuality in men ⁴²	2
Hopelessness ²⁴	1
Impaired cognitive inhibition in affective disorders ⁴³	4
In persons exhibiting NSSI: NSSI frequency, number of NSSI methods, and hopelessness; borderline personality disorder, impulsivity, posttraumatic stress disorder, NSSI method of cutting, and depression ⁴⁴	4
Low psychosocial functioning with childhood sexual abuse ³⁵	2
Lower lipid levels ⁴⁵	4
Mood disorder ⁴⁶	4
Negative attributional style ²⁴	1
Neuroticism ²⁴	1
Obesity ³⁴	4
One child in family ⁴⁶	4
Perception and understanding of self ²⁴	1
Physical abuse ³⁹	1
Physical neglect ³⁹	1
Physical pain ⁴⁷	4
Placebo use in adolescents with MDD, OCD, and anxiety disorders ²⁶	1
Polygenic risk scores for major depression, bipolar disorder, and schizophrenia ⁴⁸	2
Poor relationship with family ⁴⁶	4
Previous suicide attempts ³⁵	2
Psychotic unipolar depression ⁴⁹	3
PTSD ⁵⁰	3
Rumination ²⁴	1
Schizophrenia with history of alcohol use or family history of psychiatric illness ⁵¹	1
Schizophrenia with physical comorbidity or history of depression, family history of suicide, or history of drug use, or history of tobacco use, or being white, and depressive symptoms ⁵¹	4
Self-injurious thoughts and behaviors ⁴⁰	1
Serotonin transporter (<i>5-HTT</i>) gene polymorphism ^{52,53}	4
Sexual abuse ³⁹	1
Sleep disorders (insomnia, parasomnias, and sleep-related breathing disorders) associated with psychiatric disorders ⁵⁴	4
Sleep-wakefulness ²⁴	1
Smoking ^{46,55}	4
Substance use disorder ^{46,56}	4
Suicidal ideation and suicide plans ⁴⁰	1
Suicide of relatives ⁴⁶	4
Suicide theory-relevant risk factors ²⁴	1
<i>TPH2</i> polymorphisms ⁵⁷	3
Unemployment ⁵⁸	3

BDNF = brain-derived neurotrophic factor; MDD = major depressive disorder; NSSI = non-suicidal self-injury; OCD = obsessive-compulsive disorder; PTSD = posttraumatic stress disorder.

* Depends on the reference group.

Table 2 Risk factors for suicide death or completed suicide

Risk factor	Level of evidence
Alcohol use ^{25,59,60}	3
Anorexia nervosa ⁶¹	4
Antidepressant drugs in pediatric patients ⁶² – modest risk	1
Antidepressant medications for inpatients ⁶³	4
Anxiety ^{28,30}	3
<i>BDNF</i> marker Val66Met in persons with psychiatric disorders ³¹	4
Bipolar disorder with male sex and first-degree family history of suicide	3
Bipolar disorder ⁶⁴	1
Borderline personality disorder ⁶⁵	2
Change of life ⁴⁶	4
Child maltreatment ³³	4
Childhood sexual abuse ³⁵	2
Cigarette smoking ⁶⁶	1
Community violence ³³	4
Comorbid disorders – anxiety and misuse of alcohol and drugs ⁶⁷	1
<i>COMT</i> Val158Met polymorphism, among females ⁶⁸	3
Deliberate self-harm ⁴⁰	1
Depressed mood ^{24,59,63}	1
Deprived of liberty ⁶⁹	1
Diabetes ⁷⁰	3
Difficulties in interpersonal relationships ⁷¹	4
Epilepsy ⁷²	4
Expression of suicidal ideation in the first year of follow-up ⁷³	4
Family history of psychiatric disorder ⁶⁷	1
Family history of suicide ⁶³	4
Frustrative nonreward ²⁴	1
Hopelessness ^{24,67,63}	1
Lifetime childhood abuse in males ³³	4
Low psychosocial functioning with childhood sexual abuse ³⁵	2
Lower education ⁴⁶	4
Lower lipid levels ⁴⁵	4
Male gender ^{59,67,74}	1
Mood disorders ⁴⁶	4
Negative life event ⁴⁶	4
Neuroendocrine function ²⁴	1
Non-married and aged < 65 years ⁷⁴	3
Personality disorder ⁵⁹	4
Pesticides stored at home ⁴⁶	4
Physical pain ⁴⁷	4
Poor anger management ⁷¹	4
Previous suicide attempt ^{35,40,46,63}	1
Rumination ²⁴	1
Schizophrenia during inpatient stay ⁶³	4
Schizophrenia with higher intelligence quotient, poor adherence to treatment, or hopelessness ⁵¹	4
Schizophrenia with male gender, history of attempted suicide, younger age ⁵¹	1
Schizophrenia ^{63,75}	1
Seeking help for mood disorder ⁴⁶	4
Self-injurious thoughts and behaviors ⁴⁰	1
Serotonin transporter (<i>5-HTT</i>) gene polymorphism ^{52,53}	4
Severe depression ⁶⁷	1
Single (marital status) ⁷⁶	1
Sleep disorders (insomnia, parasomnias, and sleep-related breathing disorders) associated with psychiatric disorders ⁵⁴	4
Sleep-wakefulness ²⁴	1
Smoking ⁵⁵	4
SSRI use in depressed adolescents ⁷⁷	4
Substance use disorder ^{59,56}	4
Suicidal ideation and suicide plans ^{40,63}	1
Suicide of relatives ⁴⁶	4
<i>TPH2</i> polymorphisms ⁵⁷	3
Worthlessness, inadequacy, or guilt ⁶³	4

BDNF = brain derived neurotrophic factor; *COMT* = catechol-O-methyltransferase; SSRI = selective serotonin reuptake inhibitor.

factors for attempts and death, as these are the main outcomes to be prevented.

Except for the presence of a previous history, there are still no data in the literature that differentiate the

risk factors for attempts or suicide throughout life from the risk factors for immediate events. Therefore, common clinical sense should always prevail in the assessment.

Genetic

Suicidal behavior is high in family members of individuals who attempt or complete suicide.⁷⁸ Evidence from a multitude of research designs (adoption, family, genome scan, geographical, immigrant, molecular genetics, surname, and twin studies of suicide) suggests genetic contributions to suicide risk.^{78,79} Heritability estimates of suicidal behavior from twin studies range from 30 to 55%, and twin and family studies suggest that the genetic etiology of suicide attempt is partially distinct from that of psychiatric disorders themselves.^{48,78,79}

The large number of published meta-analyses on the associations between single-nucleotide polymorphisms (SNPs) and suicidal behavior mirrors the enormous research interest in this topic. Although a previous meta-analysis observed similarities in some studies, the effect sizes were small and rarely statistically significant, and there was substantial heterogeneity.⁸⁰ For this reason, and as it is a very well-studied area the results for which are constantly changing, we will limit ourselves to presenting only the most relevant positive results.

An association between serotonin transporter (*5-HTT*) gene polymorphisms and suicidal behavior (suicidal attempt and completed suicide) has been described.^{52,53} The brain-derived neurotrophic factor (*BDNF*) gene polymorphism Val66Met has also been reported in psychiatric disorders.³¹ In individuals who committed suicide, postmortem studies show changes in the methylation pattern or expression of some genes, in addition to a higher overall methylation rate. In patients with suicidal ideation, methylation in the promoter of the *BDNF* gene was found to inhibit its expression.^{81,82}

In another study, a significant association was identified between the catechol-O-methyltransferase (*COMT*) gene polymorphism Val158Met and risk of suicide among women.⁶⁸ There are also associations of tryptophan hydroxylase 2 (*TPH2*) polymorphisms with psychiatric disorders and suicidal behavior.⁵⁷

In genome-wide association studies (GWAS) of attempted suicide, polygenic risk scores for major depression were significantly associated with suicide attempts in major depressive disorder ($R^2 = 0.25\%$), bipolar disorder ($R^2 = 0.24\%$), and schizophrenia ($R^2 = 0.40\%$).⁴⁸

However, it is important to note that genetic changes in suicidal behavior are still controversial, and as one author concluded, at present, there is no identified gene directed linked to suicide.⁸³

Demographic data

In absolute numbers, suicide mortality peaks in the 15-to-29 age range. Among children aged 10 to 14, suicide is the third most common cause of death, and the second most common cause of death up to the age of 34 years.⁸⁴ The ratio between men and women varies according to different studies and regions.^{59,67,84} Homosexual or bisexual orientation may also be a risk factor,⁴² as are being the only child in a family,⁴⁶ having low educational attainment,⁴⁶ being unmarried,⁷⁶ and being in prison.⁶⁹

Socioeconomic variables influence suicide rates only through their interaction with other risk factors and, mainly, with mental disorders. Several factors have been observed: age, sex, ethnicity, and related parameters; social status (low income, income inequality, unemployment, low education, and low social support); social change (urbanization and income change); neighborhood (inadequate housing, overcrowding, and violence); and environmental impacts (climate change, natural catastrophe, war, conflict, and migration).^{8,84}

An important observation is that the definition of whether a variable is a risk or protective factor depends on the reference group.⁷⁶ For example, according to the U.S. Centers for Disease Control and Prevention (CDC), people between the ages of 60 and 64 have a higher prevalence of deaths by suicide than children aged 5 to 9 years, but a lower prevalence rate of deaths by suicide than those aged 80 to 84 years. In this sense, being 60 to 64 years old is considered a risk factor for suicide only when compared to the pediatric age group.^{76,85} At the same time, being 60 to 64 years old can also be a protective factor when compared to the 80-to-84 age group.⁷⁶ Age, sex, race and ethnicity, family types, education level, employment status, and socioeconomic status may be risk factors for suicidal attempt or suicidal death; whether these factors are particularly strong depends on the reference group.⁷⁶

Psychological factors, stress, and external factors

Some psychological stressors and other external factors associated with suicidal behavior include affiliation and attachment,²⁴ arousal,²⁴ bullying,³³ change of life,⁴⁶ child maltreatment,³³ child sexual abuse,³³⁻³⁵ community violence,³³ dating violence,³³ difficulties in interpersonal relationships,⁷¹ exposure to self-injurious thoughts and behaviors of others (e.g., friends, family members, schoolmates, etc.),⁴⁰ family history of self-injurious thoughts and behaviors,⁴⁰ frustrative nonreward,²⁴ hopelessness,²⁴ impaired cognitive inhibition in affective disorders,⁴³ impairment of cognitive systems (e.g., impulsiveness, attention problems),²⁴ low psychosocial functioning with childhood sexual abuse,³⁵ negative attributional style,²⁴ negative life events,⁴⁶ neuroticism,²⁴ perception and understanding of self,²⁴ poor anger management,⁷¹ poor relationship with families,⁴⁶ rumination,²⁴ and suicide of relatives.⁴⁶

Physical and health factors

Few variables were significant for this category: neuroendocrine function,²⁴ higher cortisol levels below age 40 years,⁴¹ and lower lipid levels⁴⁵ are the main findings. Others include physical pain⁴⁷ and sleep-wakefulness.²⁴

Suicidal behavior history

Information on previous suicidal behavior is the most important and, together with treatment of mental illness, among those factors most amenable to intervention. Previous suicide attempts,³⁵ self-injurious thoughts and

behaviors,⁴⁰ suicide ideation and suicide plans,⁴⁰ suicide of relatives,⁴⁶ deliberate self-harm⁴⁰ (associated with other factors), expression of suicidal ideation in the first year of follow-up,⁷³ and family history of suicide⁶³ are the most relevant events.

Clinicians should be especially vigilant in cases of repetition of suicide attempts, maintenance of suicidal ideation despite all efforts at treatment, previous serious suicide attempts, and if suicidal behavior occurs in conjunction with active symptoms of mental illness.

Nonsuicidal self-injury and suicidal behavior

Not all cases of nonsuicidal self-injury and suicidal behavior are related to future attempts or suicide. Little information exists that can predict the groups at greatest risk. So far, the following factors have been identified as significant (level of evidence 4): non-suicidal self-injury (NSSI) frequency, number of NSSI methods, hopelessness, borderline personality disorder, impulsivity, post-traumatic stress disorder (PTSD), use of cutting as an NSSI method, and depression.⁴⁴ Risk should also be considered when NSSI behavior is associated with other risk factors for suicidal behavior, especially previous suicide attempts,³⁵ self-injurious thoughts and behaviors,⁴⁰ suicide ideation and suicide plans,⁴⁰ and suicide of relatives.⁴⁶

What mental illnesses are most related to suicidal behavior?

Mood disorders^{46,59,71,86} are the main diagnosis associated with suicidal behavior. The second most frequent factor is substance use and abuse, including acute alcohol use,²³ any alcohol use,^{46,59} substance use disorder,^{46,51,56,59} chronic cannabis use,³⁶ and smoking.^{46,55} Other frequent diagnoses are personality disorder⁵⁹ (especially borderline personality disorder),⁶⁵ psychotic disorders such as schizophrenia,⁵¹ including schizophrenia with sleep disorder⁵⁴ and schizophrenia with physical comorbidity or history of depression, family history of suicide or history of drug use or history of tobacco use or being white, and depressive symptoms,⁵¹ schizophrenia in males with history of attempted suicide and younger age,⁵¹ and schizophrenia with higher intelligence quotient or poor adherence to treatment or hopelessness.⁵¹ Anxiety disorders²⁸ associated with suicide include panic disorder with sleep disorder⁵⁴ and PTSD with sleep disorder.⁵⁴ Other important diagnoses are anorexia nervosa,⁶¹ body dysmorphic disorder,⁸⁷ and sleep disorders (insomnia, parasomnias, and sleep-related breathing disorders) in the presence of psychiatric disorders.⁵⁴

Regardless of the diagnosis, it is important to remember that suicidal behavior is a complication of mental illness, and its presence means that improvement has not yet been achieved. Therefore, the presence of suicidal ideation and attempts must be regarded and addressed as the presence of an episode or crisis. Table 3 lists the main mental disorders related to suicidal behavior.

Table 3 Mental disorders related to suicidal behavior

Factor	Level of evidence
Acute alcohol use ²³	4
Alcohol use ^{24,46,59}	3
Anorexia nervosa ⁶¹	4
Anxiety disorders ²⁸	4
Bipolar disorder ^{32,59,64,88,89}	1
Body dysmorphic disorder ⁸⁷	4
Borderline personality disorder ⁶⁵	2
Depression with sleep disorder ⁵⁴	4
Depression ^{51,59,71,77}	4
Mood disorders ^{46,59,86}	4
Panic disorder with sleep disorder ⁵⁴	4
Personality disorder ⁵⁹	4
Psychosis with depressive symptoms ³⁸	1
PTSD with sleep disorder ^{50,54}	3
Schizophrenia with sleep disorder ⁵⁴	4
Schizophrenia ⁶³	4
Schizophrenia ^{51,75}	1
Smoking ^{46,55}	4
Substance use disorder ^{46,51,56,59}	4

PTSD = posttraumatic stress disorder.

Does the use of antidepressants increase the risk of suicide?

In the opinion of several experts, the use of antidepressants may increase the risk of suicide at the beginning of treatment. This information needs to be analyzed carefully. For the pediatric population, there is a modest increase in suicide.⁶² Antidepressant drugs may improve suicide attempts in the short term compared to a placebo,²⁷ while selective serotonin reuptake inhibitor (SSRI) use may be related to completed suicide in depressed adolescents.⁷⁷

For youths, no significant effects of treatment on suicidal thoughts and behavior was found, although depression responded to treatment. No evidence of increased suicide risk was observed in youths receiving active medication.⁹⁰ In contrast, exposure to SSRIs almost doubled (odds ratio [OR] = 1.92) the risk of suicide and suicide attempts among adolescents in these observational studies. It is possible that only the most severely ill adolescents would have been prescribed antidepressants, so this observational sample may well have had a particularly high risk for suicide actions. Nevertheless, caution and close monitoring are recommended when antidepressants are prescribed in this age group.⁹¹

Attention should be paid to the fact that bipolar disorder usually starts in childhood and can lead to a first depressive episode, which could result in the prescription of antidepressants, assuming a unipolar depressive episode. In these cases, there is still a risk of worsening symptoms of psychomotor agitation and impulsivity, which should already be a concern when prescribing antidepressants to the pediatric population.

On the other hand, in a meta-analysis, the prescription of fluoxetine and venlafaxine decreased suicidal thoughts and behaviors over time in adult and geriatric patients compared to a placebo by reducing depressive symptoms. For young people, no significant effects of treatment on suicidal thoughts and behavior were

found, although depression responded to treatment. There was no evidence of an increased risk of suicide in young people taking medication.⁹⁰ Another study concluded that the evidence supporting a causal link between antidepressant use and suicide in children is weak.⁹²

What we propose, then, is that treatment is a way to reduce the risk of attempted and completed suicide; however, in the case of antidepressants, closer vigilance is needed in the first 30 days, especially in youths.

Does assessing suicidality increase the risk of suicide?

A meta-analysis concluded that assessing suicidality with regard to negative outcomes did not demonstrate significant iatrogenic effects or support the appropriateness of universal screening for suicidality, which should allay fears that assessing suicidality is harmful.⁹³ Despite the apparently strong association between high-risk categorization and subsequent suicide, the low rate of inpatient suicide means that the predictive value of a high-risk categorization is below 2%. It is recommended that hospitals develop safer environments by improving systems of care to reduce the suicide of psychiatric inpatients rather than conduct risk assessments.⁶³ Therefore, such an approach to suicidal behavior cannot be a risk factor, but a protective factor.

Conclusion for risk factors

There are many risk factors for attempted and complete suicide, and there is no single factor capable of predicting short- or long-term events. Therefore, assessment must be complete, individualized, and consider the combination of multiple factors, with particular emphasis on personal and family history of suicidal behavior, presence of acute mental illness, and stressors that individuals have difficulty handling.

Table 4 Protective factors for suicide attempt and completed suicide

<i>Against attempted suicide</i>	
Antidepressants (fluoxetine and venlafaxine) in adults and geriatric patients with depression (short-term)	1
High religiosity ⁷⁶	1
Higher school connectedness ⁹⁵	4
Sleep durations of 8 h and 8-9 h per day ⁹⁶	4
Treatment with clozapine in schizophrenia and schizoaffective disorder ⁹⁷	1
<i>For suicide death</i>	
Antidepressants (fluoxetine and venlafaxine) in adults and geriatric patients with depression (short-term)	1
Confidence in one's own coping skills in difficult situations ⁷¹	4
Lithium for mood disorders ⁹⁸⁻¹⁰⁰	1
Religiosity ¹⁰¹	4
Religiosity in older populations ¹⁰¹	4
Religiosity in western cultures ¹⁰¹	4
SSRIs among depressed adults and people aged 65 or older	4
Treatment with clozapine in schizophrenia and schizoaffective disorder ⁹⁷	1

SSRI = selective serotonin reuptake inhibitor.

Protective factors

There are far fewer data on protective factors than on risk factors. Known protective factors are shown in Table 4. Such factors can reduce the chance of a new attempt or death. However, protective factors do not replace the presence of several risk factors, and the best measures to be offered to the patient are surveillance and treatment. It is noted that in some situations, psychopharmacological treatment is protective, again reinforcing the importance of treatment in preventing suicide. For medications, we present only the best available evidence in this table. Other options will be presented in the "Intervention" item in the next article in this guideline.⁹⁴

Conclusion for protective factors

There are fewer protective factors identified in the literature, and the same rules that apply to risk factors apply to them. No single protective factor can be considered as a guarantee that a fatal event will not occur. The presence of protective factors helps, but does not replace treatment and monitoring. Patients with protective factors but with multiple risk factors should be handled with caution.

Assessment

There is no effective model capable of predicting suicidal behavior, and its cause is multifactorial. The evaluation needs to be as broad as possible. On the other hand, suicidal behavior is a common health situation, which can overburden the system if long-term models are chosen. In addition, suicide is a medical emergency, and it requires rapid and effective evaluation. For this reason, a structured assessment focused on essential information is recommended.

An important finding suggests that 11 and 50% of individuals with suicidal behavior who were treated in an emergency service either declined or abandoned outpatient treatment, respectively.¹⁰² Therefore, careful evaluation focusing on the development of a therapeutic alliance from the very first contact is essential.

The first step recommended by this guideline, which is ignored in several documents, is to rule out other medical emergencies that require immediate care, such as trauma and poisoning. Health professionals can often neglect such situations in favor of overvaluing psychic symptoms and suicidal behavior. Instead, care of the suicidal patient should begin as in any other medical emergency.

During the assessment, the psychiatrist obtains information about the patient's psychiatric and other medical history and current mental status. This information allows the psychiatrist to identify risk and protective factors for suicide, which may require acute interventions.^{19,103,104} It also allows immediate patient safety concerns to be addressed and helps determine the most appropriate scenario for treatment, as well as develop a differential diagnosis to guide treatment planning.^{19,103} The breadth and depth of psychiatric assessment aimed specifically at assessing the risk of suicide varies according to the environment, the patient's ability to provide information, and availability of information from other sources.¹⁰³

Although assessment scales for suicidal behavior are available, they do not have the necessary predictive validity for use in routine clinical practice, and should be considered only complementary.¹⁰³

We recommend that the priority assessment be based on the Practice Guideline for the Assessment and Treatment of Patients with Suicidal Behaviors.¹⁰³

Current and past presentation of suicidal behavior

Specifically, healthcare professionals should inquire about suicidal thoughts, plans, and behavior, specific methods considered for suicide (including their lethality and the patient's expectation about lethality, as well as whether firearms are accessible), evidence of hopelessness, impulsiveness, anhedonia, panic attacks, or anxiety, reasons for living and plans for the future, alcohol or other substance use associated with the current presentation, and thoughts, plans, or intentions of violence toward others.¹⁰³ This detailed information must be obtained at each attempt.¹⁰³

Psychiatric illness

Healthcare professionals should determine the presence or absence of signs and symptoms associated with specific psychiatric diagnoses and identify specific psychiatric symptoms that may influence suicide risk.¹⁰³

Past history

Healthcare professionals should review the psychiatric history (e.g., previous and comorbid diagnoses, prior hospitalizations, and other treatment, past suicidal ideation), history of medical treatment (e.g., identify medically serious suicide attempts and past or current medical diagnoses), as well as gauge the strength and stability of current and past therapeutic relationships.¹⁰³

Family history

Healthcare professionals should inquire about family history of suicide and suicide attempts and psychiatric hospitalizations or mental illness, including substance use disorders; determine the circumstances of suicides in

first-degree relatives, including the patient's involvement and the patient's and relative's ages at the time; and determine the childhood and current family milieu, including history of family conflict or separation, parental legal trouble, family substance use, domestic violence, and physical and/or sexual abuse.¹⁰³

Psychosocial situation

Healthcare professionals should consider acute psychosocial crises or chronic psychosocial stressors that may augment suicide risk (e.g., financial or legal difficulties, interpersonal conflicts or losses, stressors in gay, lesbian, or bisexual youths, housing problems, job loss, and educational failure).^{71,103}

Individual strengths and vulnerabilities

Healthcare professionals should consider how coping skills, personality traits, thinking style, and developmental and psychological needs may affect the patient's suicide risk and the formulation of the treatment plan.¹⁰³

Some structured and simplified interviews can assist in the assessment of risk and protection factors, which in turn can assist in planning interventions. For example, D'Onofrio et al.¹⁰⁵ has developed a 10- to 15-minute approach that includes screening, brief intervention, and referral to treatment.¹⁰² Another similar model is the so-called security planning intervention (SPI). It is indicated for patients in emergency departments, trauma centers, telephone helplines, psychiatric inpatient units, and other acute care settings. The SPI consists of a list of coping strategies and sources of support that patients can use to alleviate a suicide crisis.¹⁰²

The Emergency Department Safety Assessment and Follow-Up Evaluation (ED-SAFE) assessed screening and intervention in a single study. The authors concluded that universal screening plus intervention was more effective in preventing suicides compared with universal screening added to treatment as usual and treatment as usual alone.^{106,107} In response, we propose, under the name of "Safety Plan," an approach in which assessment (including of risk and protection factors) is conducted in sequence with therapeutic measures. Such focused

Table 5 Scales for suicidal behavior assessment

Scale	Indication	Level of evidence
Suicide attempt		
Patient Health Questionnaire-9 (PHQ-9) ¹⁰⁸	Patients with depression/anxiety disorder	3
SAD PERSONS Scale (SPS) ¹⁰⁸	Patients in psychiatric emergency care	2
Manchester Self-Harm Rule (MSHR) ¹⁰⁸	Patients presenting after self-harm/suicide attempt	2
Early Recollections Rating Scale (ERRS) ¹⁰⁸	Presenting after self-harm/suicide attempt	3
Recent self-harm in the past year - Alone or homeless, Cutting used as a method of harm, Treatment for a psychiatric disorder (ReACT) ¹⁰⁸	Presenting after self-harm/suicide attempt	3
Södersjukhuset self-harm rule (SOS-4) ¹⁰⁸	Presenting after self-harm/suicide attempt	2
Complete suicide		
Beck Hopelessness Scale (BHS) ¹⁰⁸	Depression/anxiety disorder	3
Scale for Suicide Ideation-Worst (SSI-W) ¹⁰⁸	Depression/anxiety disorder	3
ReACT	Presenting after self-harm/suicide attempt	3

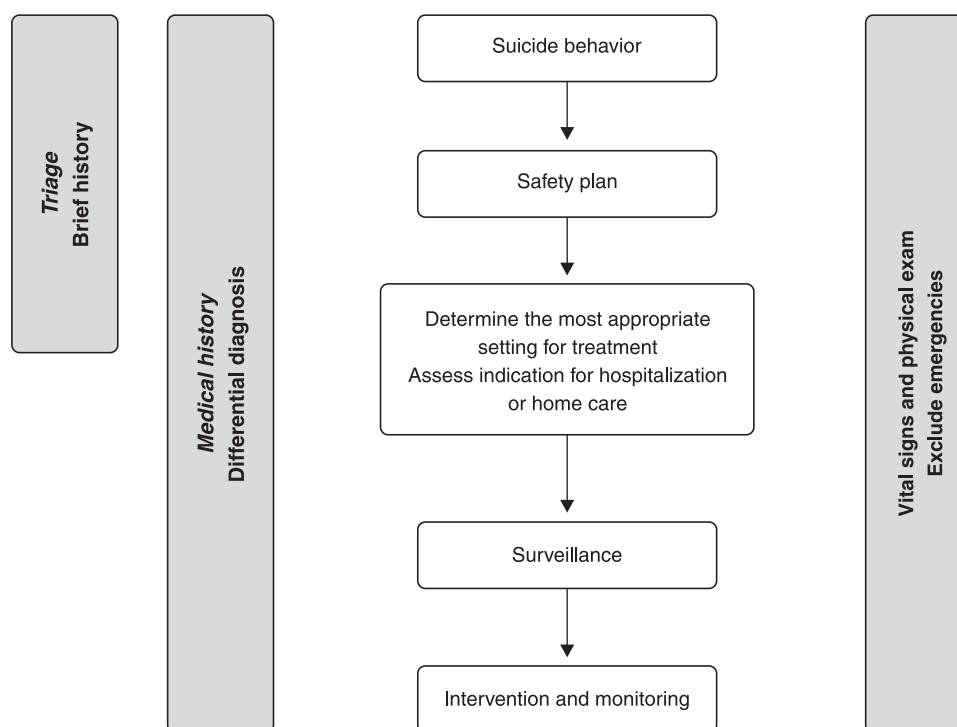


Figure 2 Flow diagram for management of suicidal behavior, with a focus on emergency settings.

assessment can be more effective and save time and costs.^{102,106,107}

Scales

None of the available instruments for assessment of suicidality reached the predetermined benchmarks (80% sensitivity and 50% specificity) for the suicide outcome.¹⁰⁸ Since most scales are unable to evaluate and predict a future attempted or complete suicide with good precision, no single scale or measure can be recommended to replace a comprehensive evaluation performed by a psychiatrist. Such instruments have only complementary value and must be preceded by a thorough history, physical and psychological examination, and assessment of risk and protection factors. Suggested scales for complementary use are listed in Table 5.

Conclusion for assessment

Considering the complexity of the assessment of risk and protection factors and uniting the need for a special assessment for patients with suicidal behavior, we suggest the use of the Safety Plan technique, which combines assessment with intervention. This technique will be discussed in the next article of this series.⁹⁴

Conclusion

In conclusion, this first part of the guidelines discussed the importance of assessing suicidal behavior, especially in regard to risk and protective factors. Based on the discussion, we propose a flow diagram for suicidal

behavior management (Figure 2). A focused assessment can be more effective and save time and costs, especially if combined with intervention measures.⁹⁴

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