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Review

The European Psychiatric Association (EPA) guidance on suicide treatment and prevention

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ABSTRACT

Suicide is a major public health problem in the WHO European Region accounting for over 150,000 deaths per year.

Suicidal crisis: Acute intervention should start immediately in order to keep the patient alive.

Diagnosis: An underlying psychiatric disorder is present in up to 90% of people who completed suicide. Comorbidity with depression, anxiety, substance abuse and personality disorders is high. In order to achieve successful prevention of suicidality, adequate diagnostic procedures and appropriate treatment for the underlying disorder are essential.

Treatment: Existing evidence supports the efficacy of pharmacological treatment and cognitive behavioural therapy (CBT) in preventing suicidal behaviour. Some other psychological treatments are promising, but the supporting evidence is currently insufficient. Studies show that antidepressant treatment decreases the risk for suicidality among depressed patients. However, the risk of suicidal behaviour in depressed patients treated with antidepressants exists during the first 10–14 days of treatment, which requires careful monitoring. Short-term supplementary medication with anxiolytics and hypnotics in the case of anxiety and insomnia is recommended. Treatment with antidepressants of children and adolescents should only be given under supervision of a specialist. Long-term treatment with lithium has been shown to be effective in preventing both suicide and attempted suicide in patients with unipolar and bipolar depression. Treatment with clozapine is effective in reducing suicidal behaviour in patients with schizophrenia. Other atypical antipsychotics are promising but more evidence is required.

Treatment team: Multidisciplinary treatment teams including psychiatrist and other professionals such as psychologist, social worker, and occupational therapist are always preferable, as integration of pharmacological, psychological and social rehabilitation is recommended especially for patients with chronic suicidality.

Family: The suicidal person independently of age should always be motivated to involve family in the treatment.

Social support: Psychosocial treatment and support is recommended, as the majority of suicidal patients have problems with relationships, work, school and lack functioning social networks.

Safety: A secure home, public and hospital environment, without access to suicidal means is a necessary strategy in suicide prevention. Each treatment option, prescription of medication and discharge of the patient from hospital should be carefully evaluated against the involved risks.

Training of personnel: Training of general practitioners (GPs) is effective in the prevention of suicide. It improves treatment of depression and anxiety, quality of the provided care and attitudes towards suicide. Continuous training including discussions about ethical and legal issues is necessary for psychiatrists and other mental health professionals.

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1. Epidemiology of suicide

1.1. Suicide in the world

According to the World Health Organization (WHO), approximately 1 million people die by suicide in the world every year and it is estimated that 1.5 million will die from suicide in 2020. The global suicide rate is 14 suicides per 100,000 inhabitants: 18 suicides per 100,000 for males and 11 suicides per 100,000 for females. The global suicide rate among those aged ≥ 75 years is approximately three times higher than the rate among youth ≤ 25 years [160]. There is a clear predominance of male over female suicides. The age group in which most suicides occur is 35–44 years for both genders. Suicide is the third cause of death among adolescents in the world; however, suicide is very rare before puberty [17,77].

1.2. Suicide and attempted suicide in the WHO European Region

Information from the WHO on mortality due to suicide for the WHO European is presented in Table 1. It is estimated that there are 10–40 attempted suicides for each completed suicide [15]. This ratio is higher among adolescents and decreases with age. The prevalence of lifetime suicide attempts in the general population is around 2.7 to 5.9% [98,110,156].

According to the latest WHO statistics [160], approximately 150,000 people in the WHO European Region completed suicide and 1,500,000 attempt suicide. The highest suicide rates for both males and females are found in Lithuania, Russian Federation, Belarus, Finland, Hungary and Latvia. However, in the last 2–3 decades several countries in Europe showed a marked decline in their suicide mortality, particularly in the countries with high suicide rates (e.g., Denmark, Estonia, Germany, Hungary, Sweden), while few others, primarily those with relatively low suicide rates, showed a slightly increasing tendency [115]. Suicide usually has no single cause; however, up to 90% of individuals who complete suicide meet the criteria for a psychiatric disorder, such as mood disorder, substance use disorder, psychosis or personality disorders [10,28,52,83,114,140]. Comorbidity of depression with personality and anxiety disorders is very common [28,52,137]. Attempted suicide is the most important predictor of a completed suicide [143]. Prevention of attempted suicide and suicide through adequate diagnostic procedures and treatment of those disorders is, therefore, a high priority in the psychiatric praxis.

Approximately 1,000,000 people die by suicide in the world every year. Suicide rates are higher amongst men than females. The age group in which most suicides occur is 35–44 years for both genders. It is estimated that there are 10–40 attempted suicides for each completed suicide [15]. This ratio is higher among adolescents and decreases with age. Up to 90% of individuals who complete suicide meet the criteria for a psychiatric disorder. Comorbidity with psychiatric disorders is high.

2. Definition

A meritorious attempt to revise the nomenclature for the study of suicide was performed by Silverman [130,131]. Suicide attempt is defined as a self-inflicted, potentially injurious behaviour with a nonfatal outcome for which there is evidence (either explicit or implicit) of intent to die. The term parasuicide originated in Europe and covers both suicide attempts and other self-destructive behaviour. Deliberate self-harm (DSH) is defined as an intentional

Table 1

Suicide rates (number of suicides per 100,000 inhabitants) in the European region, according to the latest WHO mortality data, and year for which latest data are available.

Country	Males	Females	Total	Year
Albania	6.31	3.45	4.84	2004
Andorra	–	–	–	–
Armenia	4.51	1.00	2.53	2006
Austria	26.1	8.20	12.69	2008
Azerbaijan	1.8	0.5	0.70	2007
Belarus	46.56	7.61	25.26	2007
Belgium	26.37	9.14	17.46	2004
Bosnia Herzegovina	20.3	3.3	12.91	2007
Bulgaria	17.70	4.29	10.48	2006
Croatia	25.57	6.18	14.99	2008
Cyprus	3.43	0.96	2.13	2007
Czech Republic	20.20	4.16	11.79	2008
Denmark	16.04	5.69	10.59	2006
Estonia	29.07	6.23	16.49	2008
Finland	28.96	8.27	18.45	2008
France	22.79	7.52	14.68	2007
Georgia	3.30	0.97	2.05	2001
Germany	15.46	4.68	9.80	2006
Greece	4.78	0.99	2.85	2008
Hungary	37.15	8.59	21.53	2008
Iceland	16.42	7.45	12.10	2008
Ireland	14.43	4.18	9.29	2008
Israel	7.88	1.68	4.65	2007
Italy	8.43	2.29	5.19	2007
Kazakhstan	44.92	9.25	25.69	2008
Kyrgyzstan	15.99	4.02	9.76	2006
Latvia	32.60	6.16	17.84	2007
Lithuania	55.93	9.10	30.72	2008
Luxembourg	19.71	7.37	13.07	2006
Macedonia	10.48	3.94	7.07	2003
Malta	5.35	1.03	3.13	2008
Netherlands	11.17	4.91	8.02	2008
Norway	14.00	6.09	10.02	2007
Poland	23.04	3.74	12.94	2007
Portugal	15.64	4.08	9.36	2003
Republic of Moldova	30.78	5.38	17.24	2008
Romania	18.37	3.55	10.63	2008
Russian Federation	50.55	8.13	27.40	2006
San Marino	7.28	0.00	3.62	2000
Serbia	22.17	7.97	14.62	2008
Slovakia	21.80	3.15	11.93	2005
Slovenia	28.75	6.64	17.19	2008
Spain	10.48	3.11	6.61	2005
Sweden	16.29	6.59	11.36	2007
Switzerland	21.85	9.11	15.12	2007
Tajikistan	–	–	–	–
Turkey	2.4	3.4	2.9	2005
Turkmenistan	–	–	–	–
Ukraine	36.51	5.66	19.54	2006
United Kingdom	9.71	2.66	6.12	2007
Uzbekistan	8.87	2.37	5.53	2005

self-poisoning or self-injury, irrespective of motivation and does not require for its usage the establishment of suicidal intent [51].

3. The stress-vulnerability model and the suicidal process

Suicidal behaviour can be conceptualized as a complex process, which develops over time. It can range from suicidal ideation, which can be communicated through verbal or non-verbal means, to DSH, suicide attempt, and, in some cases, completed suicide. The suicidal process is influenced by interacting biological, psychological, environmental and current situational factors. One of the most important components modulating the risk for suicidal behaviours as well as their prevention is a person's state of mental health and self-image.

Many people who suffer from mental illness of various types, have personality disorders and have undergone terrible life events,

but nonetheless have neither considered taking their own lives nor committed suicidal acts. The propensity to suicide has interested many researchers and various models have been devised to explain the aetiology of suicidality. In the stress-vulnerability model [89,149,152] (Fig. 1), genetic make-up as well as acquired susceptibility contributes to a person's predisposition or vulnerability. Early traumatic life experiences, chronic illness (especially in the central nervous system [CNS]), chronic alcohol and substance abuse, and also environmental factors such as social position, culture, diet, etc. all play a part in the development of vulnerability.

Vulnerability for suicidal behaviour is held to be the crucial determinant of whether or not it is manifested under the impact of external stressors. The vulnerability towards suicidal behaviour, in certain individuals, involves both environmental and genetic factors, as well as interactions in-between (GxE) [73,153,154]. Suicidal behaviours cluster into families, and twin and adoption studies show that the genetic set-up can explain up to 50% of the variance in suicidal behaviour [23]. Suicidal behaviour belongs to the category of complex diseases, and thus involves different sets of interacting gene clusters, active at different time points during the life span, often depending on the presence of adverse environmental exposures, and this results in a probabilistic rather than deterministic genetic diathesis, which can catalyse (rather than cause) the emergence of suicidal behaviour later in life [153,154]. The observed pleiotropy of certain genes, e.g. the serotonin transporter (SLC6A4) and monoamine oxidase (MAO) genes, which play a role in both the developmental stages in youth as well as in adult activity of the same circuits, in parallel with novel hypotheses concerning modelling plasticity, in addition to vulnerability, may help to resolve certain paradoxes observed in relation to the outcomes of treatment with Selective Serotonin Reuptake Inhibitors (SSRIs) and sometimes contradictory GxE observations [154]. Gene-environment approach gave new hope for possible associations especially with the short allele (S) of the serotonin transporter promoter polymorphism (5HTTLPR). Caspi et al. [27] have demonstrated that individuals carrying at least one copy of the S allele who experienced stressful life events had an increase in depressive symptoms between ages 21 and 26. Furthermore, life events occurring after age 21 predicted depression and suicide ideation or attempt at age 26 among carriers of S allele who did not have a prior history of depression. A recent meta-analysis in which 54 published studies were included and analysis were stratified by the type of stressor studied, showed a strong evidence for an association between the S allele and

increased stress sensitivity in childhood maltreatment [70]. A further variation in the serotonin transporter gene, a SNP within the L variant, and a gene-by-environment by timing interaction model were suggested to be involved in order to explain the findings of gene \times environment interactions in the interplay that leads to suicidality [165].

It is difficult to disentangle genetic effects linked solely to suicide from different categories of psychiatric disorders, which are frequently connected with suicidal phenotypes. Certain severe subtypes of psychiatric diagnoses reflect genetic risks, e.g. early onset depression in suicidal behaviours [88]. However, some suicides also occur in the clinical absence of psychiatric disorders and it is important to note that genes can also confer susceptibility that can only be detected by direct biological measurements of so-called functional endophenotypes, e.g. measured by cortisol-levels and -response or functional brain imaging [88]. Genetic variants which contribute to various types of susceptibility to mental ill health and suicidal behaviour are continuously being found and investigated, and have been reviewed in detail elsewhere [153,154]. However, any complete definition of a genetic diathesis for suicide is still in its infancy. Genetic discoveries can become particularly relevant for treatment, either by pointing out novel molecular drug targets, or as a guide to understanding the response of available treatments (e.g. pharmacogenomics) [21].

Suicidal behaviour is in most cases the final outcome of a process that is influenced by the interaction of genetic, psychological, environmental and situational factors. The stress-vulnerability model is widely accepted as the theoretical framework for the understanding of the development of suicidal behaviour.

4. Recognizing the patient at risk for suicide

4.1. Suicide in different clinical settings

Suicidal persons in most cases suffer from mental disorders or psychiatric symptoms and have been in contact with general practitioners (GPs) or other medical services, including psychiatric services, shortly before the completed suicide or suicide attempt. Many also have a family history of mental disorders and suicidal behaviour [22,92].

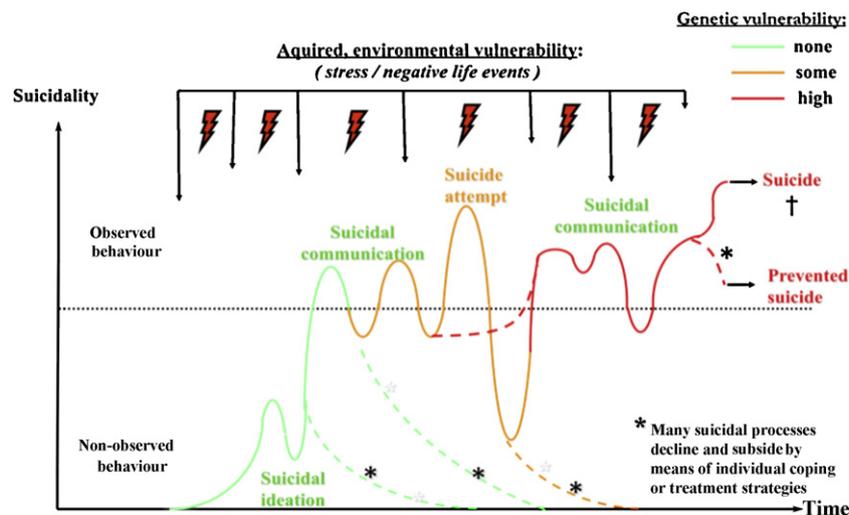


Fig. 1. The suicidal process and its evolution on the basis of the individual vulnerability.

From D. Wasserman, C. Wasserman. Oxford Textbook of Suicidology and Suicide Prevention: A Global Perspective [155].

Population-based mortality studies in psychiatric care show a 16-fold risk for suicide among psychiatric inpatients and a 2–3-fold greater risk for outpatients compared to the risk of patients treated for psychiatric problems in primary care [76]. Among patients who committed suicide and who had been in contact with mental health services, the following major diagnostic categories amongst cases of suicide were observed: mood disorders, schizophrenia, personality disorders and substance use disorders [63,76].

It has been reported that approximately 24% of people who complete suicide had been in contact with mental health services in the year before their death. A quarter of them committed suicide within 3 months after hospital discharge, with a peak in the first week, and the highest number of suicides occurring the day after discharge [9]. These data demonstrate a key role for the management of mental disorders in suicide prevention. If one considers treatment effectiveness of major mental disorders to be 50%, and assumes that 50% of people are correctly diagnosed and successfully treated, one could expect a reduction in the suicide rate of around 20% [16]. This goal is possible to reach, by using a comprehensive suicide preventive strategy, with appropriate treatment, adequate follow-up and rehabilitation services for people with mental disorders, especially those suffering from mood disorders, schizophrenia and substance use disorders.

Suicide is almost always associated with the presence of an underlying psychiatric disorder. Approximately half of people who complete suicide had been in contact with health care services shortly beforehand. Risk of suicide is high up to 3 months after discharge from a psychiatric hospital, with the highest number of suicides within the first week after leaving the hospital.

5. Risk factors for suicide

5.1. Heritability

Suicidal behaviours aggregate in families and it seems that they are inherited independently of mental disorders [22,23,92]. Twin data also confirm heritability of suicide [120,121]. Family history of suicidal behaviour is an independent, non-interacting risk factor for attempting suicide [119].

5.2. Current and lifetime psychiatric disorders

The suicide risk in patients with mood disorders has been estimated to be 13–26 times as high as that in the general population [8,49]; in schizophrenia, 8.5–10 times higher [49,57] and in alcohol and other substance use disorders it is six times higher [49]. A study from Denmark on a prospective cohort of over 176 thousand subjects estimated that absolute risk for completed suicide after first hospital contact due to mental disorder was 7.8% for bipolar disorder, 6.7% for unipolar affective disorders and 6.5% for schizophrenia [99]. The diagnostic panorama of mental disorders in attempted suicides has a similar pattern to that of completed suicide. Most frequently depressive, substance use and comorbid personality disorders are present [10,140]. Clinical studies show that successful treatment reduces the risk of suicidal behaviour in patients with various psychiatric disorders [83].

5.2.1. Major depression

Depression in patients who complete suicide is usually severe, and accompanied by insomnia, agitation, anxiety, appetite and weight loss, severe hopelessness, incongruent feelings of heavy guilt, worthlessness, thoughts of death and recurrent suicidal ideation not divertible by external interaction. Impulsive and

aggressive behaviour, along with cluster B personality disorders, alcohol/drug abuse and dependence increases the risk of suicide in people with major depression [8,49,114]. Mood disorders significantly increase the risk of suicidal behaviours in adolescence [24,72].

5.2.2. Bipolar disorders

Suicide mortality of people with bipolar disorder is high, approximately 25 times higher than the general population. Suicidal behaviour is particularly high in patients showing rapid cycling course, in mixed/agitated depression, in patients with early onset of illness, and during the first years after the first diagnosis [26]. Comorbidity in bipolar disorders is high especially with anxiety disorders and with the abuse of alcohol and drugs [3,10,49,114].

5.2.3. Anxiety disorders

Anxiety disorders, especially in adolescents and young adulthood, are associated with lifetime suicidal ideation and suicide attempts, [20]. There is a high co-morbidity of anxiety disorders in suicidal adults, particularly with major depression and substance abuse. Severe anxiety may be a critical causal factor of acute suicidality [36,82]. Fawcett [35] in his early work showed that anxiety disorders are highly under-recognized and under-treated in suicidal people. In post-traumatic stress disorders, suicidality is associated with co-morbidity of depression and substance abuse [103]. The qualitative studies of single cases [144] as well as personal accounts written by individuals near to suicide [5,68] illustrate the role in suicidality of severe anxiety and anxiety-fraught depressive states, bordering to annihilation anxiety [85].

5.2.4. Alcohol and other substance use disorders

All substance use disorders increase the risk of suicide. The relationship between alcohol and suicidal behaviour is complex, as alcohol has short-term positive effects on the alleviation of despondency. As an intoxicating substance, alcohol, in the long run impairs cognitive processes, increases impulsivity and aggression, and lowers the threshold for triggers of suicidal behaviour. Suicide victims who suffer from alcohol and other substance use disorders are often younger, male, divorced or separated. They often suffer from recent adverse life events, and they are also likely to be intoxicated at the time of the suicide [107]. Therefore, in the clinical practice, recent and accumulated negative life events and deterioration of social situation, both at work and in other contexts should be monitored in the alcohol- and drug dependent patients.

5.2.5. Schizophrenia

The increased risk of suicide in schizophrenic patients is associated with previous depressive disorders, substance misuse or dependence, previous suicide attempts, agitation and motor restlessness, fear of mental disintegration, poor adherence to treatment and recent loss events [54]. Schizophrenic patients living alone are at greater risk of suicide. Suicide risk seems to be related to affective symptoms and less to core psychotic symptoms [54]. The majority of schizophrenic patients who commit suicide, do so after their first episode, while suffering depressive symptoms. While suicide risk in schizophrenia is higher among young people [102], relatively few studies have investigated suicidality in adolescents with schizophrenia. First-episode psychosis is considered to be a critically important time for intervention in the course of schizophrenia. A study on a prospective cohort of individuals with first-episode psychosis reported that 21.6% of the patients attempted suicide and 4.3% completed suicide during the 7-year follow-up period [116]. In another study, suicide risk has been found to be highest in the first month of treatment, decreasing rapidly over the following

6 months and declining slightly thereafter [37]. Studies found violent and suicidal behaviour to be common in psychotic adolescents [12,65]. Data is still relatively poor regarding its proper management, particularly in adolescent-onset cases.

5.2.6. Eating disorders

Overall, mortality by suicide has been found to be increased in patients with eating disorders [29,60]. The risk factors for attempted suicide and suicide in eating disorders are associated with depression, social phobia and obsessive-compulsive symptoms. One of the strongest predictors of suicide among persons with eating disorders is comorbidity with alcohol abuse [72].

5.3. Trauma

Traumas, especially different kinds of physical violence, mental and sexual abuse both in childhood and adulthood, bullying, victimization and exclusion at school or in the work place, are significant risk factors for suicide. There is strong evidence from population-based studies that childhood trauma is a risk factor for suicidal behaviour [95,97,125,126]. A review of clinical studies also concluded that patients who have experienced childhood trauma are more vulnerable to later social stress or adversity and are prone to suicidal behaviour [124].

5.4. Stressful life events (SLEs)

Negative life events such as loss, change in life situation, and different narcissistic injuries can act both as a catalyst and as a factor, which precipitates the development of the suicidal process. Traumatic loss includes not only death of, or separation from a partner, friend or a significant other; but also a loss of a national or cultural affiliation; loss of health; loss of possessions or autonomy due to hospitalization; loss of employment; study opportunities; home or financial position. Important transitions or changes in life situations such as: entering or leaving periods of development, e.g. puberty, middle age, the menopause, or old age, can be a risk situation for vulnerable individuals [150]. Immigrants from countries with high number of suicides, or immigrants from other cultures, e.g. Islamic population in Europe, show higher risk for attempted suicide than the native population [25]. Exposure to completed or attempted suicide is also an important risk factor especially in young people [43]. Between 1 and 5% of adolescent suicides have been reported to occur in clusters [44]. Contagion of suicidal behaviour among adolescents has also been reported to occur during hospitalization [142]. The US Centre for Disease Control issued specific guidelines to prevent the phenomenon of suicide clustering in the community [100].

Unsolved relationship problems, family violence, particularly childhood physical and sexual abuse, insecure sexual orientation, especially in adolescence and young adults, increase the risk of attempted suicide and suicide in those with vulnerable personalities. Breaking the law, being imprisoned and circumstances related to public holidays are also risk situations [151]. Seasonal patterns, with more suicides in the spring and summer than during the winter have also been observed [112]. Suicide may take place in association with a day of particular significance to the person involved, for example, it can coincide with the same date when a family member committed suicide, or occur in connection with anniversaries, days or events that are negatively emotionally charged for the individual.

5.5. Chronic illness

Significant correlations between suicidal behaviour have been reported with diseases in the CNS such as multiple sclerosis, Huntington's chorea, epilepsy, Parkinson's disease, migraine, brain

and spinal cord lesions, as well as in patients with stroke, certain forms of cancer, diabetes, and chronic pain [138]. Findings are robust for increased risk of suicide in neurological disorders and cancer. Studies in cardiac, lung and other somatic disorders are fewer and the results are not conclusive. In children and adolescents, as in adults, other physical disorders associated with elevated suicide risk are: new onset diabetes mellitus, bronchial asthma, HIV, epilepsy and multiple sclerosis [166].

5.6. Protective factors

Cognitive flexibility; active coping strategies that help to find alternative solutions to difficult life situations; healthy lifestyles characterized by socializing with the people who do not use drugs and misuse alcohol; keeping a good diet; good sleeping patterns; physical exercise and an active life, are important protective factors that can be stimulated both by clinical and community activities. Strengthening the sense of personal value; confidence in oneself and one's situation; seeking help and advice when difficulties arise and important choices must be made; supporting training in communication skills, can all be facilitated by different kinds of group activities with patients both at the clinic or in the community [149]. The clinic's collaboration with the community services, concerning integration into ordinary life of the suicidal patient through work, and other activities are important measures for suicide prevention that can be developed in collaboration between psychiatric clinics and proactive psychiatric rehabilitation and social services at the community level. It has been also found that besides good family and social support, practicing a religion as well as having a high number of children has a protective role against suicidal behaviour [39].

Interaction of risk and protective factors determine the vulnerability of an individual to develop suicidal behaviour. Several risk factors have been studied and were found to be significantly associated with suicide. Suicide risk factors are cumulative in their nature; the higher the number, the higher the probability is of suicidal behaviour. A thorough evaluation of risk and protective factors should be performed for every patient at risk for suicide.

6. Assessment of the suicidal patient

The suicidal risk assessment should always be comprehensive and include psychiatric, somatic, psychological and social perspectives. Neurobiological assessment can be performed in specialized settings. As suicide risk fluctuates within a short period of time, it is important to repeat the suicide risk assessment over time in an empathic and not mechanistic way.

A suicidal person frequently reacts to negative life events with shame and irrational guilt feelings, despair, hopelessness, as well as with anger and rage. Their propensity to provoke repetitive emotional injury or offence, thus confirming the idea that they are neither needed nor loved by others, may nourish fantasies of revenge and lead to uncontrolled outbursts and self-destructive acts. To others such behaviour may seem paradoxical: despite a great need for help and support from health care staff and significant others, a suicidal person, like the person with a severe personality disorder, often fears dependency and intimacy, and devalues both the need for closeness and attachment to significant others [75]. Thus, the suicidal person may mislead both family members and hospital staff, giving an unrealistic sense of independence and of being able to manage without the help of others. Similarly misleading can be the signs of tranquillity once a decision is taken to carry out a suicide, which may paradoxically

install a momentary composure and a release from internal tension.

Although extreme ambivalence to living or dying is often strongly expressed by the suicidal individual, it can be missed by others. If observed in the diagnostic and treatment process, dialogue and reflection on such ambivalence can be used to motivate the patient for treatment, arrest the negative development of the suicidal process, and prevent suicide. If ambivalence and suicidal communication goes undiscovered, the treatment process and the life of the patient can be endangered [85,86,151].

6.1. Suicidal communication

It sometimes happens that suicide attempters who are treated at the clinic are evaluated from all possible points of view, without exploratory questions about the attempted suicide being posed. Such omissions can contribute to the patient's feelings of guilt, shame, and helplessness. Suicidal intentions can be explicitly and directly expressed, in the clinical situation, but indirect suicidal communication is also common. This communication is not always easily intelligible and may be missed by the clinician if he or she does not know the patient well and cannot place what is said within its context. Non-verbal communication or acting out, like the acquisition of a weapon, the collection of prescription medicines, writing a will, giving away keepsakes and at the same time seeking solitude or avoiding health care services, should ideally be reported by relatives or friends, but it is up to the medical staff to ask for such information. The suicidal person's own capacity to ask for and accept help is often poor. Some suicidal people, even those who are married or live with a partner, can tend not to share their thoughts with others. Moreover, suicidal communication evokes many different responses from others, including the health care staff. It can evoke empathy but also ambivalence and frustration, especially if the patient is demanding, blaming, aggressive, and noncompliant with the treatment regimens and the helpful intentions of both relatives and the clinical staff [86,157,158]. Such reactions can be difficult to deal with constructively and it is advisable to train staff on a regular basis about how to manage strong emotional reactions as well as how to recognize suicidal risk situations. Consultations with other colleagues and the opportunity for reflection and supervision should be an integrated part of the work routines in the psychiatric workplace.

6.2. Previous history of suicidal behaviours

A suicide attempt is by far the strongest predictor for a completed suicide [143]. Previous history of suicidal behaviour, both on the individual and on the family level should always be collected.

6.3. Family history of suicide and attempted suicide

Data concerning familial history of suicide and strongly related disorders, such as depression and substance abuse, can help in the evaluation of the patient's risk for suicide. Usually, the collection of data concerning familial history of suicidal behaviours and mental disorders is based on the report by the patient only. A standardized method of investigation using for example the Family History Questionnaire, may lead to a reduction of the risk of under-reporting [6].

6.4. Assessment of underlying psychiatric disorders: DSM-IV axis I diagnoses

A clinical diagnostic interview can be performed, according to the classification system used in the clinic, e.g. ICD 10 [161] or DSM-IV-TR [4]. The DSM-IV-TR system is recommended in suicide

risk assessment as it is a multiaxial diagnostic system and therefore useful in the diagnostic process as suicidal persons often suffer from co-morbid conditions, both on the same axis, and between different axes, and this can be elucidated in a systematic way when following all of the DSM-IV-TR axes. It has been proposed that suicidal behaviour could be considered as a separate diagnostic category in the next version of the DSM (DSM-V) [101].

6.5. Assessment of personality disorders: DSM-IV axis II diagnoses

According to different studies, 44–62% of suicide attempters meet the diagnostic criteria for personality disorders [28]. Impulsive, aggressive, pessimistic personality features, as well as cyclothymic and irritable affective temperaments increase the risk of suicidal behaviour in patients with any DSM-IV Axis I disorder. Borderline personality disorder (BPD), anti-social personality disorder and avoidant personality disorder increase the risk for suicide, particularly in the case of comorbid major depressive episodes or substance use disorders [31]. Previous studies have reported poor reliability for detecting personality disorders, probably due to unstructured instruments that were used. Structured Clinical Interview for DSM disorders – axis II personality disorders (SCID-2) shows good psychometric properties. Using this instrument, inter-rater reliability for personality disorders performed by trained senior clinicians is good [127]. In a population of adolescents who had completed suicide, it was found that around 43% had a diagnosis of conduct disorder or anti-social personality disorder [90]. A history of childhood abuse and post-traumatic stress disorder, in people with BPD increases the risk for suicidal behaviour [133]. Studies also implicate that perceived negative life events, especially involving interpersonal distress, loss and legal problems, are more likely to precipitate suicidal behaviour in people who have a pre-existing personality disorder [56,61,62,163]. During the previous 6 months before suicidal acts, an increase in the number of negative life events, particularly in the month before the suicide attempt, has been observed in people with personality disorders. Characteristics of people with personality disorders such as poor coping strategies, impulsivity, erratic behaviour, aggressive behaviour and hostility [137], anxiety and primitive psychological defences [145] are all associated with suicide and self-destructive behaviours. Examples of primitive defence strategies are the illusion of being self-sufficient, paranoid projections that depict others as all-bad and persecuting, aggressive attacks on one's self and others [58,85]. Cognitive impairment, resulting in deficits in thinking about the future, are associated with suicidality both in antisocial personality disorder and BPD [84]. Major factors for suicide are the co-occurrence of axis I and II diagnoses. People with co-morbidity disorders are more likely to have made more previous suicide attempts [52]. Not being able to make friends, having an addiction as well as depression, feelings of hopelessness, aggressive and impulsive behaviours are found in the co-morbid groups.

6.6. Somatic disorders: axis III disorders

Severe somatic disorders, especially in the CNS but also disorders that imply pain, physical disability and distress, increase the risk for suicide. Depression and anxiety, cognitive deficits, medical induced abuse of medication due to pain influences the risk of suicide. The time before and days after a serious somatic diagnosis, is given is a risk period, as is the case if the patient has had the disease for a long time and their status deteriorates [138].

The assessment of a suicidal patient should always include an evaluation of the underlying psychiatric, personality and somatic disorders, the evaluation of past history of suicidal behaviour in the patient and his family, and the presence of explicit and implicit suicidal communication. The formulation of a multi-axial DSM-IV diagnosis can be helpful.

7. Specific measurements for the evaluation of suicidal risk

7.1. Biological measurements

The most promising predictors of suicidality are low concentrations of the serotonin metabolite 5-hydroxyindoleacetic acid (5-HIAA) in the spinal fluid [88] in combination with hypothalamic–pituitary–adrenal (HPA) axis dysfunction measured by dexamethasone non-suppression (DST). However, those measurements can only be performed at specialized clinics and are mainly used in the research setting. Therefore, psychiatric, psychological and social assessment, in combination with psychometric scales, is currently used in ordinary psychiatric practice for the evaluation of suicidal risk.

7.2. Psychological assessment

Personality, especially impulsivity, control of aggression, tolerance for frustrations, narcissistic integration, cognitive functions, coping strategies and the ability to resolve conflicts, as well as motivation for biological and psychological treatments and capacity for utilizing the planned treatment should be assessed with free or structured interviews and tests [79,128].

7.3. Social investigation

An assessment of the patient's social network, economic stability, housing and employment situation allows to uncover areas of potential distress or conflict.

7.4. Psychometric scales

The Sad Persons Scale for Assessing the Risk of Suicide (SAD PERSONS) [105] and its supplemental scale (NO HOPE [128]) are short predictive scales with high clinical validity, thus helpful in acute care.

Items of suicide severity in the Hamilton Depression Rating Scale [HDRS] [48] and the Paykel Suicide Scale (PSS) [106] are valid measurements of current suicidal severity [13]. The PSS comprises four items that investigate unspecific death wishes, thoughts of suicide, suicidal plans and suicide attempts and is administered in the form of four simple yes/no questions.

The item 'my future seems dark to me' of the Beck Hopelessness Scale has been reported as a good predictor of future suicidal behaviours [2]. These scales are extensively described in the *Oxford Textbook of Suicidology and Suicide Prevention: a Global Perspective* [13].

In the assessment of the suicidal risk, it is helpful to measure subjective dimensions by using the Reason for Living Inventory or by measuring the suicidal process by idiographic self-ratings that indicate what is of importance and constitutes a reason for living for that person [81]. Reasons for living can vary significantly between people with suicidal ideation or those who have attempted suicide. The important reason for suicide is to escape from unbearable psychic pain and hopelessness when unable to cope with problems that constrict the person's life space.

To assess suicidal ideation, lethality and severity of suicide attempt, as well as DSH without suicide intent, the Columbia-Suicide Severity Rating Scale (C-SSRS) has been developed [108]

and it is currently the most used tool to evaluate suicidal risk in pharmacological studies.

Suicide risk should be specifically evaluated with clinical interviews assessing psychological and social functioning of the patient. Specific psychometric scales can be useful in the determination of suicidal risk.

8. Management of the suicidal patient in acute suicidal crisis

Suicidal behaviour is the most common and most serious psychiatric emergency. Treatment of the suicidal crisis is complicated and requires a series of considerations: its outcome is ultimately not predictable, the risk factors and warning signs are often non-specific. The suicidal crisis generates high environmental stress and anxiety in health care professionals and family members, and a multi-disciplinary treatment competence is needed to adequately treat and care for the patient.

8.1. Evaluation

Suicidal patients in crisis are often seen by the mental health professional either after a suicide attempt or when tormented by acute, severe suicidal ideation. In both cases a careful diagnostic examination should be performed. Even if this first evaluation occurs in the emergency department of a general hospital, it is important to conduct the interview in a secluded area and in an atmosphere of empathy. If possible, the information given by the patient should be corroborated with collateral sources, including the family.

8.2. Hospitalization vs. other types of care

One of the very first difficult decisions that the clinician has to make is whether to admit the patient to a psychiatric ward or perform the treatment in outpatient care. While this decision is straightforward in severe cases or when physical injury is present, it can be much more difficult in the majority of cases in which the advantages and disadvantages of hospitalization are blurred. Even if in the recent past, admission to a psychiatric unit was almost a clinical reflex, today everything is additionally complicated by the need to carefully administer the available economical resources. Moreover, there is today an increased awareness about negative effects of hospitalization, which needs to be taken into account.

Hospitalization certainly has its advantages: first of all, it usually provides increased security for the patient. If appropriate safety measures are followed, the psychiatric ward allows for continuous care and observation of the patient over a longer period of time, gives the opportunity to acquire all necessary information, allows utilizing a multi-disciplinary treatment team, and provides a framework for the necessary treatment. On the other hand, it is impossible to achieve complete security in the psychiatric ward. It has been reported that 14% of all deaths by suicide are committed by psychiatric inpatients [64]. The figures from the systematic investigations of suicide during psychiatric treatment in Sweden show that up to 20% of all suicides were committed by inpatients [129].

Major disadvantage of hospitalization, besides a higher treatment cost, is that, especially if forced, it can endanger a previously established therapeutic alliance in an on-going treatment. Moreover, loss of freedom may deepen regression. A crucial decision about hospitalization depends on the presence of a social network surrounding the patient and the accessibility of qualified outpatient treatment. Even in mild cases, sending a

patient home alone is not recommended without arranging follow-up visits.

8.3. *Treatment of the acute suicidal crisis*

In the suicidal crisis, it is crucial to provide real support and acknowledge the discomfort and suffering of the patient. Pharmacological treatment has a significant role in reducing acute psychological distress. It is advisable to immediately implement a treatment plan focused on reducing acute psychiatric symptoms such as anxiety, insomnia, depression and eventual psychotic symptoms. The patient should be monitored continuously and not be left alone. A great relief associated with surviving a suicide attempt or after consultation can occur. However, this relief can be short-lived and be replaced by discomfort and serious suicidal thoughts as soon as the patient returns home. Therefore, extreme attention should be given both to follow-up precautions and to prescribing medication to a suicidal patient who is not hospitalized. They should be supervised by the family or community services. Medication should be given only in small packages [53].

The early phases of treatment have been recognized as the most at risk [94].

8.4. *Long-term treatment plan*

Even if, during the crisis, evaluation and acute treatment of the patient are the first priority, long-term treatment and follow-up strategies and start as soon as possible. Schizophrenic patients may need life-long rehabilitation and follow-up evaluations. Low quality of life appears to be an important predictor of suicidality [71].

Appropriate follow-up to reduce suicidal risk includes, for example, the active involvement of family members, frequent telephone contacts, and scheduled reappointments to monitor progress and possible side effects of medication. The social network of the patient and its ability to support the patient must always be evaluated. In some cases, a protected discharge should be taken into consideration with admission to a day clinic or a residential facility.

8.5. *Safety measures at the ward*

Safety measures can be divided into environmental and patient-specific precautions [79]. Environmental precautions are mainly aimed at restricting access to means of suicide in the ward: windows should be locked or have a narrow opening; access to dangerous items such as toxic substances, sharp objects, lighters, and curtains should be removed, limited or supervised. Since hanging and suffocation are common methods of suicide among inpatients, special attention should be paid to exposed pipes and ropes especially in bathrooms. The possibility of jumping should be considered when the psychiatric ward is located on higher floors. Risk factors associated with the physical environment are sometimes neglected, because evaluation of these factors is not included in the medical education and training of medical students. Minimization of sharp tools and fixtures that can facilitate strangulation by hanging and other high-risk aspects within the hospital environment are important elements in the prevention of suicide in psychiatric units [79]. Simple modifications are suggested such as: a smooth showerhead, shaped in order to make hanging from it virtually impossible and a lock to the bathroom that allows the staff to open the door from the outside preventing suicide attempters from locking the door from the inside. Other suggested modifications are: bi-directional door opening – in and out; door locking mechanism with a shortened gripping lever to

prevent resistance against a key; installation of highly located and reversed (the screws outwards) locks to enable the releaser to reach the screws; low mounted hangers in the closets to prevent suicide by hanging; narrow and high windows with a central hinge (allowing only partial opening) without curtains; crystal mirrors (break into small shards) recessed into the wall and avoidance of sharp corners; power outlets locked in closets, low tension power outlets to prevent electrocution; automatic fire and smoke alarms with fire fighting systems in the rooms and bathrooms; flame resistant mattresses and inflexible acoustic ceiling; the individual plates installed with inflexible screws to prevent hiding objects in the ceiling [34].

Patient specific interventions include room searches or continuous and planned observation. High risk patients require close individual observation or should be placed in an area where they can be seen at all times by staff. The simple denial of suicidal ideation is insufficient evidence to determine an absence of suicidal risk. Also, reliance on so-called “no-suicide contracts” should not be considered, by itself, to be a sufficient basis upon which to make a temporary leave from hospital or discharge recommendation.

A “privilege system”, which means the establishment of different degrees of freedom according to self-control and responsibility might raise the patient’s self-confidence and improve the therapeutic relationship, if it is supported by an empathic encounter [86,158]. Safety measures should be considered also in the home environment (e.g. guns, ropes, medication) and family members should be aware of risks, especially after discharge.

8.6. *Collaborations between departments and documentation*

It is very important for clinical and legal reasons to have good documentation about risk assessment and treatment suggestions available, especially when the patient is transferred from one department to another for legal reasons. A suicide assessment conducted during an initial contact in the emergency room should be documented and include also the recommended precautions and the level of observation. Changes in the levels of precautions or in the treatment that are carried out as preparations for discharge and the follow-up plan should also be documented.

8.7. *Involvement of family and social network*

It is important to motivate a suicidal patient to involve his or her family in the treatment. Both the family and the patient should be informed regarding: risk and protective factors for suicide; availability of pharmacological and other therapies; the need of adherence to treatment; the need of the removal of potential means for suicide and the particular risk associated with firearms.

8.8. *Post-crisis discharge of the patient from the hospital*

Every effort should be made to assure that an appointment for follow up is given before discharge and that a copy of the patient’s discharge letter is sent to the doctor in the outpatient department. One should inform the patient and the family that they should apply to psychiatric emergency services in the event of a new crisis [96]. The patient, after discharge is at high risk for repetition of suicidal behaviour, even if he or she shows a significant improvement. Basic suicide preventive measures should therefore always be taken, such as limiting access to suicidal means and regular observation by family members or social services.

The acutely suicidal patient should be immediately evaluated and treated for acute psychiatric symptoms, such as anxiety, agitation, insomnia, depression. The patient's safety should be the primary concern and hospitalization should be taken into consideration. The patient should be motivated to involve family members and, if necessary, social services in the treatment plan.

9. Psychopharmacological and other biological treatments of the suicidal patient

Clinical prevention of suicidal behaviours is obtained through treatment of the underlying psychiatric disorders and through treatment of specific psychiatric symptoms.

9.1. Unipolar and bipolar depression

In spite of the fact that up to two-thirds of suicide victims have had a current major depressive episode, and around half of them have contacted different sources of health-care services during the last 4 weeks of their life, over 80% of depressed suicidal people are untreated or inadequately treated [66,67]. The risk of suicidal behaviour in major depression and in bipolar disorder is well documented and suicidality is a common reason for medical contact. As suicidal behaviour in patients with mood disorders occurs mostly during a severe depressive episode, less frequently in the frame of dysphoric (mixed) mania, and rarely during euphoric mania and euthymia, one can conclude that suicidal behaviour in patients with a major mood disorder is a state- and severity-dependent phenomenon [114]. However, while successful pharmacotherapy of major depression and bipolar disorder can prevent the risk of suicide connected with a given episode, only long-term adequate pharmacotherapy in conjunction with psychological treatment and psychosocial support can provide long-term results. Increasing evidence shows that pharmacological and psychological treatments act on genetic disposition and epigenetic, environmental effects [147].

9.2. Antidepressants, antipsychotics and benzodiazepines

Clinical studies, which include severely ill, frequently suicidal depressed patients who are usually inpatients, show that, compared to no treatment, the risk of completed and attempted suicide among depressed patients who are given long-term antidepressant pharmacotherapy is markedly reduced [8,41,93,115,164]. However, the risk of suicidal behaviour in depressed patients treated with antidepressants is still high among the non-responders and during the first 10–14 days of the treatment [69,132]. SSRIs as well as serotonin-noradrenalin reuptake inhibitors, lack sedative potential and may, in some cases, cause agitation. As anxiety, insomnia and psychotic features markedly increase during this period, supplementary medication for a short time with anxiolytics as benzodiazepines as well as with sleeping pills may be necessary until the inner restlessness and agitation is ceased and a good night sleep is achieved. In the case of comorbid anxiety in delusional depression, treatment with neuroleptics or with atypical antipsychotics is recommended [94]. Antidepressants with a sedative profile are traditionally favoured for diminishing anxiety, although this approach is not accepted by all experts [94]. To avoid the risk of lethal intoxication in case of overdose, small packages should be prescribed. Tricyclic antidepressants (TCAs) and other antidepressants which increase drive should be avoided as they may increase the risk of suicide [148].

Although antidepressant monotherapy significantly reduces the risk of suicidal behaviour in patients with major depression, antidepressants have very limited value in the acute as well as in long-term treatment of bipolar depression, because of their mood-destabilizing effects [40]. Antidepressant monotherapy (unprotected by mood stabilizers) in bipolar and bipolar-spectrum depressed individuals can worsen the course of disease not only by provoking a (hypo)manic switch, but also by inducing or aggravating depressive mixed-state agitation, which is the major facilitator of suicidal behaviours [3,33,115].

Recent results suggest that in addition to their anti-manic effect, some atypical neuroleptics (olanzapine, quetiapine and aripiprazole) have acute antidepressant and long-term mood-stabilizing effect in patients with major depression and bipolar disorders [30,162], but their specific anti-suicidal effects need further studies. On the other hand, the anti-suicidal effect of clozapine in patients with schizophrenia is well established [91] and it is shown that olanzapine might have similar effects [146], but further studies are needed.

9.3. Problems in treatment with antidepressants

Randomized clinical trials on antidepressant monotherapy in unipolar major depression show that antidepressants sometimes induce suicidal ideation or increase the risk for a suicide attempt [3,38]. However, there are several methodological limitations when studying anti-depressant induced suicidality and evidence is still insufficient [94]. Side effects of antidepressant medication such as insomnia, anxiety and agitation, particularly in the cases of covert or undiagnosed bipolarity, may play a role in a temporary increase in suicidal risk when antidepressant medication starts. However, the existing evidence should be interpreted with caution and should not motivate a clinician to neglect the benefit arising from antidepressant drugs especially in combination with psychological methods when treating suicidal depressed persons [93,115,148]. The empirical data seems to demonstrate a suicidality-decreasing effect of antidepressants, even among the most severe, "real-world" depressives, that highly overshadow their "suicide-inducing" potential [93,115].

9.4. Antidepressant medication in young people

It has been suggested that the effect of antidepressants on inducing suicidality is related to age and that it is increased in adolescent and young adults with a complex clinical picture of major depression characterized by underlying bipolarity, other comorbidities such as personality disorders, and situational stress as well as non-response to medication. [3,94,115]. The Food and Drug Administration (FDA) and the European Medicine Agency (EMA) recommend only fluoxetine for treatment of depression in children and adolescents. Administration of antidepressants in this age group requires continuous and competent monitoring of side effects. The current evidence shows that there is some increased risk of suicidal behaviour in certain children and young adults below the age of 25 who receive antidepressants. [139].

9.5. Lithium and antiepileptic mood-stabilizers

A comprehensive review of randomized, controlled and open clinical studies found 80% risk reduction for both attempted and completed suicides in unipolar major depression and in bipolar patients with long-term lithium treatment. [11,47]. The marked anti-suicidal potential of lithium is presumably linked to the serotonergic effects of lithium [78]. In long-term lithium prophylaxis of recurrent major depression and bipolar disorder, patients with one prior suicide attempt show a significant

reduction in the number of suicide attempts. This is true not only in excellent responders to treatment, but also for moderate responders and non-responders [1]. The clinical importance of this finding is that in the case of lithium nonresponse, when the patient displays one or more suicide risk factors, instead of switching lithium to another mood stabilizer, the clinician should retain lithium and combine it with another mood stabilizer. As for mood stabilizers other than lithium, it has been found that valproate and carbamazepine also have an anti-suicidal effect, however it is somewhat less robust than that of lithium [42,104].

9.6. *Electroconvulsive therapy*

Electroconvulsive therapy is effective in eliminating acute suicidal danger in severely depressed, deeply suicidal patients. Follow-up studies show that this treatment also reduces the risk of subsequent suicidal behaviour [74]. The current medical recommendations for ECT in adolescents are basically similar to those for the adult population. A review of the literature on the application of ECT in adolescents and paediatric patients (most of them were single-case reports) showed that the rates of improvement across studies were 63% for depression, 80% for mania, 42% for schizophrenia [113]. Some new data confirmed the safety and efficacy of ECT in the young [19] but no specific data on suicidality in this age group is currently available.

9.7. *Psychological treatment*

The efficacy of psychological treatment of suicidal behaviour has been studied in several trials [46,50,59,134,136,159]. In spite of a number of methodological problems and limitations, when considering studies that use a reduction in suicide attempts as an outcome measure, cognitive behavioural therapy (CBT) is recognized as an evidence-based method in treatment of suicidality [14,122,136].

Dialectical behavioural therapy (DBT) has been tested to reduce self-injury and suicidal behaviour, particularly in patients with BPD [80,135]. However, more studies are needed for DBT as well as other forms of treatment, such as brief in-home interpersonal psychotherapy [46], family psychotherapy [32], developmental group therapy [159], and psychodynamic therapy [59] which show promising results. Those therapies can be used as an adjuvant to pharmacological treatment of suicidal patients. It should be noted that, regardless of which type of psychotherapy is used, common elements which work include a good working alliance between patient and therapist, treatment fidelity, compliance, targeting identifiable skills, and emphasizing personal responsibility [122]. The evidence regarding the effectiveness of suicide preventive interventions in young people is very scarce. A recent meta-analysis [117] identified 15 relevant trials but concluded that it was not possible to draw conclusion on the effectiveness of the different interventions due to a number of methodological limitations and inconsistency of the results; CBT appeared as promising but only one trial in the meta-analysis showed that is effective in reducing suicidality in young people.

Psychosocial support is recommended as suicidal persons often struggle with existential crisis. Family or friends and significant others should be involved, if possible, in the treatment plan and be provided emotional support, if needed. After obtaining informed consent, available community resources should be mobilized and optimized. These resources include crisis centres, mental health centres and religious advisors. The goal of these social interventions is to support the patient in breaking through loneliness, to find social networks and enhance a sense of meaning in their life [122].

For all suicidal individuals, a secure relationship with the clinician is crucial, regardless of whether the clinician in question is a psychotherapist of one persuasion or another, a physician knowledgeable in pharmacological treatment, a staff member on a psychiatric ward, or a trusted social worker. Such a relationship should minimally be safe with regard to shame, which means that in the therapeutic interaction, suicidal patients should feel free to be themselves and experience being accepted as they are. It is also important to listen to the patient's preferences regarding the treatment, as this will influence the compliance to treatment, pharmacological or psychological. The treatment staff should give basic and relevant motivational information about evidence-based treatments.

9.8. *Improving skills of the Health Care staff*

Educating GPs and other health workers by psychiatrists is an evidence-based method for the prevention of suicide [87]. Increased knowledge, improved detection and increased treatment of depression, have positive changes on attitudes towards suicide and the related psychiatric disorders, diminishment of taboo and stigma associated with suicidal behaviour [111,124]. The Gotland study [123] and more recent studies as well [55,118,141] have shown significant decreases in suicide rates in comparison to control regions after education of physicians about the treatment of depression and suicide. Regular continuous education should be given to all psychiatrists and the health care staff working in psychiatric care, with focus on the new developments of the knowledge and on the ethical and legal aspects [111].

9.9. *Psychological autopsy*

The causes of a completed suicide, as well as the efficacy of the treatment given, care and preventive activities can be explored and become a source of learning after a patient has completed suicide. Retrospective inquiries or psychological autopsies involve acquiring information from the staff, close relatives, family and friends of a person who is deceased by suicide [18,109]. The objectives of the procedure are to increase knowledge that is useful for future treatment and prevention activities, to improve the effectiveness of health care routines, and to debrief the health care staff and help them manage the stress when a patient commits suicide [45]. Clinicians should contact early, preferably within the first week after suicide, the family and give emotional support to both adults and children. Family should also be informed about existing organizations which assist survivors of suicide [7].

Pharmacological treatment and CBT are evidence-based methods to reduce suicidal risk. Other psychological treatments show promising results but more studies are needed. Social support is an essential component in the rehabilitation of suicidal patients. Randomized controlled trials found that antidepressant treatment may increase suicide risk in some patients mainly in those under the age of 25. Side effects of treatment with antidepressants should be thoroughly monitored. Training of GPs and other health professionals is an evidence-based method for the prevention of suicide. It is also essential to provide continuous education about risk assessment, treatment and legal and ethical aspects for psychiatrists and other health care staff working in psychiatric care.

10. Conclusion

Suicide and attempted suicide can be prevented by adequate treatment. As many suicide victims, especially older die by their

first suicidal act, collecting information about suicide risk factors, other than current suicidality, can help clinicians in predicting suicidal danger as soon as possible. However, suicide cannot be always predicted and in some cases, due to the poor compliance to treatment, cannot be prevented. Crucial factors in determining a good outcome are conditions optimizing treatment compliance and the establishment of a multi-disciplinary team that has the competence to use a combination of biological, psychological and social interventions.

A suicidal act should not be deemed necessarily as reflecting a professional failure in identification, assessment or in the therapeutic intervention, if the psychiatrist fulfilled his/her responsibility to thoroughly evaluate the risk of suicide and to prescribe evidence-based treatment and to consciously plan for discharge with follow-up monitoring. Continuous education of the health care staff and scrutiny of routines are needed in order to gradually and steadily improve suicide treatment and prevention strategies in psychiatric care [155].

Disclosure of interest

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