Konrad Michel · Anja Gysin-Maillart

ASSIP

Attempted Suicide Short Intervention Program

A Manual for Clinicians

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ASSIP – Attempted Suicide Short Intervention Program

About the Authors

Konrad Michel, MD, is a clinical psychiatrist and psychotherapist who has developed a model of understanding suicidal behavior based on the theory of goal-directed action and narrative interviewing. He is the initiator of the Aeschi Working Group – an international group of clinicians and researchers dedicated to improving clinical suicide prevention by developing and promoting patient-oriented models of understanding suicidal behavior.

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Preface

People with a history of suicidal behavior have their own individual stories, and so does this manual. The story started with the cooperation between me (K.M.), a psychiatrist who had undergone traditional medical training, and my friend Ladislav Valach, a qualified psychologist with a special interest in social psychology and, in particular, in what is called *action theory.* It was not until much later that I realized how much these two backgrounds in professional training differ in their "image of man" (*Menschenbild*), and how fruitful such an interdisciplinary collaboration could be.

Just as in the narratives of suicidal individuals, the story of this manual starts much earlier. It began during my training in the United Kingdom: On a morning when I arrived at the hospital and was told by the nurses that one of my patients, a 42-year-old woman with a husband and two preschool children, had just thrown herself under a truck. This experience had far-reaching consequences for me – not unusual for a young psychiatry resident. I started to read about clinical suicide prevention, and when I returned to Switzerland, I began a study of the clinical risk factors and the role of health professionals in dealing with suicidal patients. The question of what clinicians can do better to reduce the number of suicides has been an important part of my professional life ever since.

But let's return to my colleague, Ladislav Valach. During a coffee break, he made a provocative remark, which turned out to have long-term consequences: "Suicide and suicide attempts are not illnesses, but actions. You medical people have learned to understand conditions in terms of signs and symptoms – i.e., pathology – and make a diagnosis, but you have never learned to understand the nature of actions."

Despite my inner reluctance, I agreed to write a case description of a patient who, after a suicide attempt, had died by suicide 1 year later, from the perspective of action theory. The basic concept was that actions, including suicidal actions, are goal directed (e.g., to put an end to a state of mental pain), and that existential crises occur when a person is faced with a situation that is a threat to important life (or "life career") goals. In addition, action theory states that in everyday life, people use stories to explain and understand actions ("Well, this is a long story...."). As part of a study supported by the Swiss National Science Foundation, we tested the hypothesis that patients seen after a suicide attempt would feel better understood if the exploratory interview was conducted according to the concept of suicide as an action – as opposed to the traditional medical model, in which suicide is seen as a symptom of mental illness. In an action theoretical approach, the interviewer sees suicidal individuals as agents of their actions, capable of "knowing" the story behind a suicide attempt. We found that patients rated the therapeutic relationship as significantly better if the interviewer used a narrative approach (that is, opening the conversation by using the words *story* or *narrative*). This seemed to us an important insight, considering the serious communication problems between health professionals and suicidal individuals. One of the major problems in clinical suicide prevention is that patients who have attempted suicide do not comply with follow-up treatment. We hoped that with a narrative interview technique, a therapeutic relationship could be established early in treatment, which would be a starting point for an effective therapy. The key assumption was that feeling understood as an individual with one's own personal story would improve treatment motivation – one of the basic concepts underlying this manual.

To discuss the results of this qualitative study, we invited a handful of internationally recognized clinical suicide researchers to a conference in 2000. In a hotel in a mountain village of the Bernese Oberland called Aeschi, the group discussed fundamental problems in clinical suicide prevention, with the help of videotaped interviews. This experience generated so much enthusiasm that the group decided there and then to continue this type of conference and open up the discussion to others. There followed 10 years of Aeschi Conferences, which brought together some of the best clinical suicide researchers and therapists from all over the world. The so-called Aeschi Working Group published guidelines for dealing with people after a suicide attempt. In 2010 the American Psychological Association (APA), published the volume *Building a Therapeutic Alliance with the Suicidal Patient* (Michel & Jobes, 2011), which had emerged from the Aeschi philosophy. In 2013 the Aeschi conferences moved to the United States (Vail, Colorado).

During that time another fruitful collaboration was established at the Psychiatric Outpatients Department in Bern, namely with Anja Gysin-Maillart, with whom I coauthored this manual. Anja Gysin-Maillart familiarized herself with the technique of narrative interviews, and together we developed a specific brief therapy for people following a suicide attempt, which we called the Attempted Suicide Short Intervention Program (ASSIP). In recent years, we have treated well over 300 patients with this intervention program, refining, enhancing, and evaluating the therapeutic approach. It is thanks to Anja Gysin-Maillart's initiative that this manual has become a reality.

Konrad Michel
February 2015

Many years of clinical experience and scientific research form the basis of this manual. My (A. G.-M.) work has always been motivated by the view that patients need specific therapeutic steps following a suicide attempt, so that they become capable of seeing life as an option again. Over the years I was continually struck by the fact that this subject left not just me but also my colleagues baffled, if not helpless. Thanks to the prolific collaboration with Konrad Michel, my point of view started to change: Understanding suicide as an action and not a disease was a crucial factor. *Every patient has his/her own very personal and individual story, which needs to be understood.* I learned to understand suicide as a goal-oriented action with an inner logic, and I became increasingly fascinated by the collaborative process of developing, devising, and assembling the elements for a specific therapeutic intervention for people who attempted suicide. As my mentor, Konrad Michel gave me a thorough introduction to the field of suicide prevention. The regular Aeschi Conferences also played a key role. They provided an opportunity for professional and personal exchange of ideas with acknowledged experts, such as David Jobes, David Rudd, Marsha Linehan, Gregory Brown, and many others. In these very special small-scale meetings, I became familiar with concepts and models ranging from neurobiology to psychoanalysis and the latest developments in cognitive behavior therapy (CBT). The focus clearly was always on a patient-centered therapeutic approach.

The development of ASSIP took several years until we decided to start a first pilot phase to investigate its effectiveness. In this phase, the feedback from patients was of paramount importance. It was important to have our patients as experts with us, "on the team." It became increasingly clear that individuals who survive a suicide attempt need a

safe place and hence a professional person, who will concentrate, along with them, fully and empathically on their individual inner experience. Therefore, we are thankful to our patients who helped us to better understand the suicidal process, and who continued to help us refine ASSIP and optimize it.

The time had come to start a scientific evaluation of the effectiveness of ASSIP. In collaboration with the Psychology Department of Bern University, we launched proper a randomized controlled trial with 60 patients each in the treatment and in the control group. As all of the patients were followed up over a 2-year period, the study took a long time to be completed. In September 2014 we got the final results, and these were very exciting, indeed. It seems that we had made a lucky choice with the therapeutic elements included in this brief therapy of 3–4 sessions, followed by regular letters over 24 months. The study gave me an opportunity to attend conferences and psychiatric institutions around the world and present our work. We were constantly met with calls for more information and to publish the therapy manual. Step by step, this ASSIP treatment manual came into existence.

With this manual I hope we have done justice to the patients' expert knowledge, and I express my heartfelt thanks for the invaluable contribution of every person who has participated in this project.

Anja Gysin-Maillart
February 2015

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My (A. G.-M.) warmest thanks go to my husband, Tobias Gysin, for his infinite patience and constant support of my work, but especially for editing the images in the treatment section of this manual. I thank my daughters, Sophie and Mia, for all of the magic moments we share, which help me time and time again to rediscover the inspiration I need for my work.

1 Introduction

Every year more than 800,000 people die by suicide, which equates to one death every 40 seconds (World Health Organization [WHO], 2014a). The number of attempted suicides is 10 to 20 times higher. After attempted suicide, the risk of a completed suicide is elevated 40 to over a 100 times compared with that in the general population (Harris & Barraclough, 1997; Hawton et al., 2003; Owens, Horrocks, & House, 2002). It is highest in the first 2 years (Suokas, Suominen, Isometsä, Ostamo, & Lönnqvist, 2001), and it increases with each subsequent suicide attempt and remains high for more than 20 years (Haw, Bergen, Casey, & Hawton, 2007; Jenkins, Hale, Papanastassiou, Crawford, & Tyrer, 2002). Therefore, special priority must be given to developing effective treatments for this patient group. In the 2014 research agenda of the Research Prioritization Task Force of the National Action Alliance for Suicide Prevention, the "Aspirational Goal Nr. 6: Ensure that people who have attempted suicide can get effective interventions to prevent further attempts" was given the highest priority of all goals (National Action Alliance for Suicide Prevention, 2014, p. 65). This is all the more important as so far there has been scant evidence that specific therapies following attempted suicide actually reduce the risk of a repeat suicide attempt or suicide over a long period. In clinical practice, all too often follow-up treatments – if they are offered to suicidal patients at all – do not even address the issue of suicidality at all.

In the prevention and treatment of suicidality, the main emphasis according to the traditional medical model has been on diagnosis and treatment of mental disorders – first and foremost depression. However, it is debatable how far this approach to the suicidal patient can actually affect suicide rates (De Leo, 2002). It has been argued that the mechanisms of suicidal behavior should be studied independently of any associated psychiatric disorder (Aleman & Denys, 2014; Linehan, 2008).

Various factors that hamper effective treatment of suicidality can be identified. One of these factors is that many patients do not comply with follow-up treatment. After a suicidal crisis, many individuals want to return to their normal daily lives as quickly as possible – that is, they try to forget the suicidal crisis as soon as possible. Up to 50% of attempters refuse outpatient treatment or drop out of follow-up therapy very quickly (Kessler, Berglund, Borges, Nock, & Wang, 2005; Kurz et al., 1988;). In a study, in which we interviewed patients 1 year after attempted suicide, the majority were unable to name a person they could have turned to for help, and a mere 10% said that they might have contacted a health professional. Most people in a suicidal crisis do not seem to think that this is a health problem for which one should see a medical professional. Too often people consider suicidal thoughts as something "private," which they want to keep to themselves, holding onto it as a possible escape in case they should find themselves in a situation with no other way out. Many individuals who have attempted suicide are ashamed and feel no one could understand them or their reasons. Many do not even understand their own suicidal behavior. Individuals at risk of suicide need a special way of communication and

special opportunities to talk about their feelings, thoughts, and the background to their suicidal crises. Their motivation to engage in therapy depends to a large extent on the trust in the health professional providing therapy. What they need is nonjudgmental acceptance, empathic understanding, and a therapy model, which helps them to understand the mechanisms of a suicidal crisis, and to develop strategies for dealing with future critical moments in life.

In contrast to those who follow a traditional medical model, in which suicidal impulses are seen as an expression of a mental disorder, the authors of this book understand suicide primarily as a goal-directed action with its own inner logic. An action theoretical model provides a frame that gives room to the very personal experience of a person's suicidal crisis and its background. A key assumption is that people explain their actions with stories, and that the therapist must be open to listening without making rash attributions, because the suicidal person alone is the "expert" of his or her own story. In an action theoretical context, these stories explain how suicide can become a goal when important life and identity issues are threatened and no alternative coping or action strategies are available. In an acute mental state full of anguish, pain, despair, hopelessness, and helplessness, suicide may appear as the solution that will put an end to the unbearable mental condition.

Follow-up studies strongly suggest that when a person has attempted suicide, the risk of future suicidal behavior, including death by suicide, cannot be "cured." Once a person has tried to solve an emotional crisis with a suicide attempt, this behavioral pattern will quickly reemerge in similar future situations, not only because a suicide attempt provides a solution (albeit temporary), but also because very often it is associated with an immediate sense of relief. The prevailing view emerging from recent developments in suicide research is that, following attempted suicide, it is crucial to establish individual safety strategies with patients, for coping differently in future emotional crises (Stanley & Brown, 2012). For as many patients as possible to benefit, treatments targeting suicidality should be brief, focused, and, of course, effective (Chesin & Stanley, 2013).

Based on such principles, the two authors developed the Attempted Suicide Short Intervention Program (ASSIP), a brief therapy specifically designed for patients after attempted suicide. The key elements of ASSIP are:

- activation of the suicidal crisis by means of a video-recorded narrative interview in a safe environment;
- reactivation of, and distancing from, the suicidal mode through guided video playback of the narrative interview, identification of the suicide-specific emotions and cognitions, and development of new cognitive schemata, complemented by a psychoeducational handout;
- written formulation of long-term goals, individual warning signs, and safety strategies for future suicidal crises;
- video-prompted reexposure to the recent suicidal crisis, aimed at testing and strengthening the safety strategies;
- credit card-sized list of personal early warning signs and individual safety measures;
- continued contact with the patient for 2 years with regular correspondence.

ASSIP combines aspects of action theory, CBT, and attachment theory. A fundamental assumption is that an action theoretical approach to the suicidal patient will establish a therapeutic alliance in the sense of a "secure base" (Bowlby, 1980; Holmes, 2001), which

will enhance the effect of the regular correspondence following the four treatment sessions. ASSIP is not a stand-alone therapy but should be offered to suicidal patients in addition to the usual clinical management and follow-up treatment.

2 Suicide and Attempted Suicide

2.1 Definitions

Suicide is the act of deliberately killing oneself. This definition includes intentional actions such as overdosing, hanging, shooting, etc,, and omission of life-saving measures – for example, refusing dialysis in renal failure. The concept of suicide as a "willed" action stands in contrast to the close association of suicide with psychiatric disorders (Barraclough, Bunch, Nelson, & Sainsbury, 1974; Isometsä et al., 1995) as well as the reports of suicide attempters who say that during the suicidal crisis they were in an out-of-the-ordinary state of mind, acting like in a trance (Orbach, 1994). The so-called rational suicide, where a suicide is believed to be a rational decision by a mentally healthy person is generally thought to be a rare exception, if it exists at all (Dörner, 1993).

Attempted suicide (Suizidversuch) was defined by Erwin Stengel (1964) as a form of deliberate self-harm limited to a short period of time where the suicidal person cannot know whether or not he or she will survive. Stengel referred to suicide attempts with only limited intention to die, as parasuicide or parasuicidal acts. Wilhelm Feuerlein (1971) sought a further differentiation based on the seriousness and the motives of the self-harm and introduced the terms *parasuicidal pause* (interruption of an unbearable situation) and *parasuicidal gesture*" (with a communicative or appellative aspect). The WHO/EURO multicenter study on suicide and attempted suicide (Platt et al., 1992) defined attempted suicide as

> an act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behavior that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage, and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences. (p. 99)

The WHO working group intended this working definition to cover the whole spectrum of life-threatening behaviors (WHO, 1986). Long-term self-harming behavior such as anorexia or substance abuse are excluded from the WHO definition.

Silverman et al. (2007) defined attempted suicide as a "self-inflicted, potentially injurious behavior with a nonfatal outcome for which there is evidence (either explicit or

implicit) of intent to die." *Suicide attempt* is the term commonly used in German-speaking countries and in North America, while in the United Kingdom, the preferred terms are *self-harm, deliberate self-harm,* or *parasuicide,* terms encompassing all forms of nonfatal self-injury (Skegg, 2005). Attempted suicide usually includes episodes of self-injury with at least some intent to die; *self-harm* or *self-injury* are broad terms which range from habitual self-injury for emotional regulation without suicidal intent through to serious suicide attempts with high intent. Distinguishing between "seriousness of intent" and "assumed intent" is problematic (and not a distinction usually made in the German-speaking sphere). Intent is often characterized by ambivalence or even concealment. Often, the goal may be to initiate change, which can include finding release from an unbearable situation, finding a state of calm, ending overwhelming mental and emotional pain, and calling attention to one's suffering, as well as a desire to put an end to a life that has become unbearable (Bronisch & Wolfersdorf, 2012; Hjelmeland & Hawton, 2004). Most people who consider suicide as an option do not go on to make a suicide attempt. In a population-based study, only 7.4% of those with baseline suicidal ideation reported a suicide attempt over the subsequent 2 years (ten Have et al., 2009).

The term *attempted suicide,* as we use it in this book, includes self-harm with at least some intent to die but excludes habitual self-harm, which is typical in borderline personality disorders. *Suicidal behavior* encompasses suicide and attempted suicide. *Suicidality* here means ways of thinking and behaving such that someone accepts death as the possible outcome of an action (based on Manfred Wolfersdorf, 2000).

Internal and External Attributions

When we explain the behavior of others, we make attributions (ascribing causes and effects of actions). If we assume that the explanation for a behavior lies in the person himself or herself, we speak of internal attributions. If we assume that an external event is responsible for a certain behavior, it is an external attribution (Heider, 1958). As outsiders we usually only have fragmentary information to explain the behavior of others. This is especially true in the case of completed suicide, when we can no longer question the person. External attributions are based on theories and models we create to explain the behaviors of others. For example, media reports may explain the suicide of an adolescent with poor marks at school ("Poor marks at school: Suicide!"), thus not only badly simplifying the mechanisms leading to suicide, but also providing a simple and sensational model that may result in copycat suicides. The medical model, in particular, has a tendency to use external attributions, based on its tendency to search for the cause of pathology, and with its emphasis on mental disorders as the cause of suicide.

Buss (1978) argued that there is a fundamental difference between explanations by an outsider and explanations by the acting person. Outside observers tend to use causal ("why") explanations – for example, "Mr. B. took his life because he had lost his job." By contrast, the individuals concerned (people who have made a suicide attempt, or a suicide note left by the dead person) generally explain their action with a motive or intention: a "reason" as opposed to "cause" – for example, saying, "At that moment I saw suicide as the only possible way of putting an end to unbearable mental pain."

In suicide research, one way to find more person-centered explanatory models is by studying suicide notes (Leenaars, 1988) and through what is known as psychological autopsies (studies designed to do proxy-based diagnostic assessments). This method involves collecting all available information on the deceased via structured interviews of family members, relatives, or friends, as well as the attending health care personnel. In addition, information is collected from available health care and psychiatric records, other documents, and forensic examination.

2.2 Epidemiology

2.2.1 Suicide

It has been estimated that every year, around 900,000 lives are lost worldwide through suicide (Lopez, Mathers, Ezzati, Jamison, & Murray, 2006). Globally, suicide is the third most common cause of death in the 15–44 age group, and ranks second among 15- to 29-year-olds globally (WHO, 2014b). National suicide rates differ widely (see Figure 1). In 2011, suicide was the 10th leading cause of mortality in the United States, claiming more than 39,000 lives annually (McIntosh & Drapeau, 2014) and affecting many more, including family members, friends, neighbors, and colleagues. In the European Union, more than 58,000 people die by suicide every year (WHO, 2003). Despite increased prevention efforts, suicide rates are increasing (WHO, 2011a), and WHO estimates that in the year 2020, approximately 1.53 million people will die from suicide. The highest rates are found in Eastern Europe, in countries such as Estonia, Latvia, and Lithuania, and to a lesser extent, in Finland, Hungary, and the Russian Federation. There is a relatively consistent predominance of suicide rates of males over suicide rates in females, with an average of 3.6:1. The only exception is China, where rates in women are higher than in men, particularly in rural areas (Phillips, Li, & Zhang, 2002). There is a tendency for suicide rates to increase with age, predominantly for men.

In Switzerland, the death toll for suicide is about three times higher than for road accidents. The main suicide methods are hanging (30%), shooting (25%), and overdosing (14%). Males, who represent 75% of all suicides, tend to choose more lethal suicide methods. In international comparisons, Switzerland has a particularly high number of suicides by shooting, largely related to the widespread availability of firearms due to the militia army, which traditionally provided each member of the army with a personal weapon, kept in the household. Reisch, Steffen, Habenstein, and Tschacher (2013) showed that changing the practice in the Swiss Army of providing army members with guns to keep in the house had an effect on male suicide rates, and firearm suicide in particular. Generally, gun laws are an important factor influencing suicide rates (Miller, Azrael, Hepburn, Hemenway, & Lippmann, 2006). In the United States, 50% of suicides use firearms (McIntosh & Drapeau, 2014). A key element is the proportion of households owing firearms (Ajdacic-Gross et al., 2006). The introduction of new gun legislation in New Zealand, requiring control of access to and storage of firearms, resulted in a marked reduction of firearm-related suicides (Beautrais, Fergusson, & Horwood, 2006). Other preventive effects have been demonstrated for reducing packet size of analgesics (Hawton et al., 2001) or building barriers on jumping sites – so-called suicide hot spots (Beautrais, 2001; Reisch & Michel, 2005).

2.2.2 Attempted Suicide

Suicide attempts are estimated to occur up to 25 times more frequently than suicides (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). In international comparisons, there

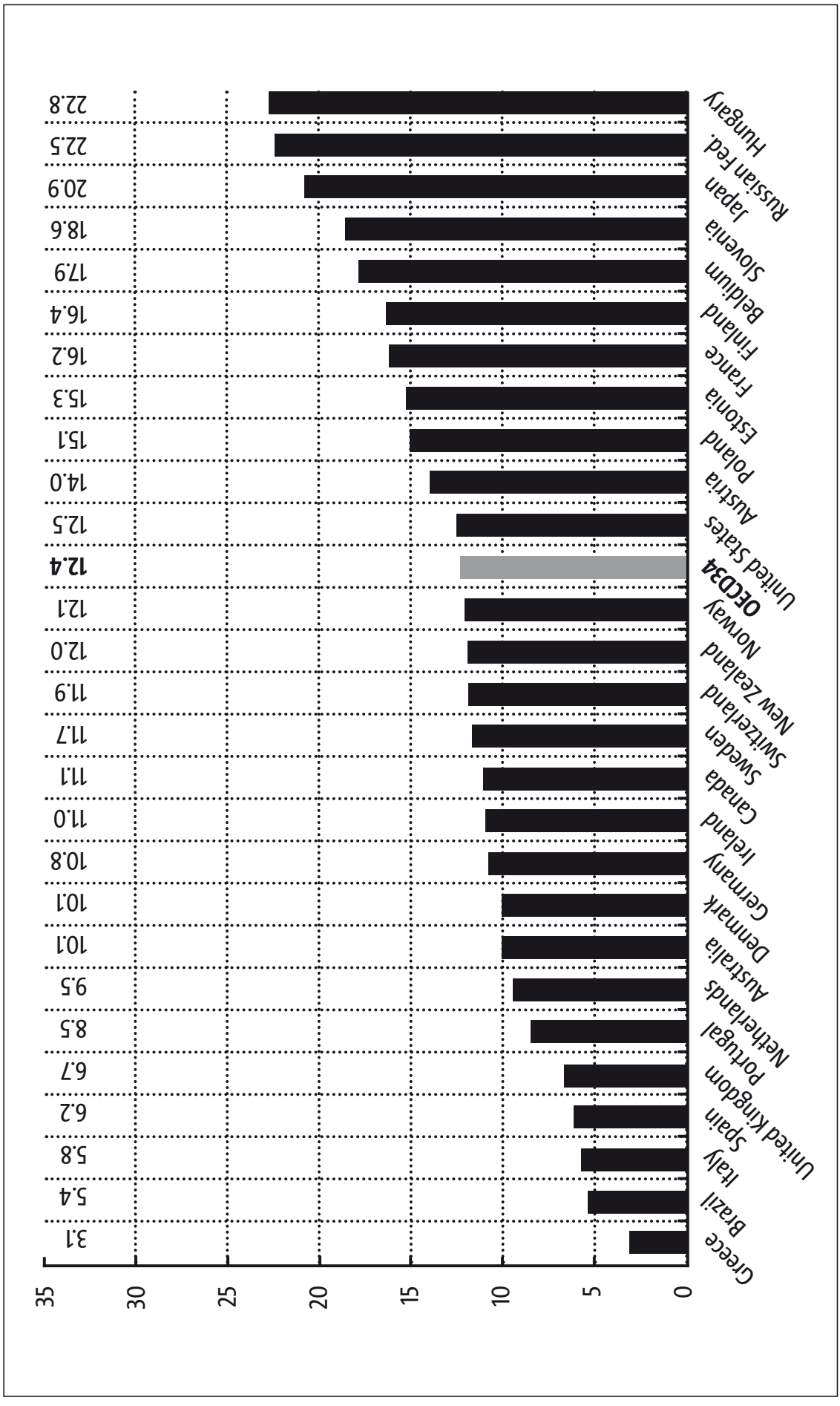

Figure 1. Age-standardized suicide rates per 100,000 population. Based on data from OECD (2013).

is a correlation between rates of attempted suicide and suicide (Hawton et al., 1998). Attempted suicide puts a heavy toll on health care resources. Emergency department visits and inpatient hospitalizations due to suicidal behavior are estimated to result in over 1 million hospital visits in the United States every year (Hoyert, Kung, & Smith, 2005). Surveys conducted in 2009 and 2010 indicated that an estimated 8.6 million US adults reported having serious thoughts of suicide in each of the prior years (Substance Abuse and Mental Health Services Administration, 2012). Nock et al. (2008), in a survey including 17 countries, found that the probability of attempting suicide was 29% in individuals with suicidal ideation, and 56% if they had made a suicide plan. Kessler, Borges, and Walters (1999) reported that, in the course of their lives, 72% of individuals with a suicide plan made an attempt.

In Switzerland, based on the data from Bern as a collaborating center in the WHO/EURO Multicenter Study on Suicidal Behavior, a yearly incidence of 105.0/100,000 population was found (Reisch, Steffen, Maillart, & Michel, 2010), with a slightly higher percentage (57%) of women. The age group with the highest risk was 20 to 29 years. Forty-two percent had made previous attempts. The most frequent methods were overdosing, followed by cutting and jumping from a height.

2.2.3 Risk Factors and Protective Factors for Suicidal Behavior

Risk factors typically reflect a chronic but not necessarily imminent risk of a suicidal action. By contrast, *warnings signs* represent acute factors that imply immediate risk of suicidal behavior, and therefore require immediate intervention (Rudd et al., 2006). While there is a broad consensus that many suicide deaths are preventable, it remains difficult to predict and prevent suicidal behavior at an individual level.

Attempted suicide is associated with a high risk of mortality from suicide and other causes (Beautrais, 2004). It is the single most important risk factor for suicide (Harris & Barraclough, 1997; Hawton, Zahl, & Weatherall, 2003). The risk remains elevated for decades and is at its highest in the first year after a suicide attempt (Jenkins et al., 2002; Runeson, 2002; Suominen et al., 2004). Individuals who make suicide attempts also have high rates of reattempts. A systematic review found that an average of 16% of suicide attempters (range 12–25%) make a further attempt in the first subsequent year, with the risk being highest in the first 3 months (Schmidtke et al., 1996; Owens, Horrocks, & House, 2002). In the WHO/EURO multicenter study, 42% of males and 45% of females had made a previous suicide attempt (Schmidtke et al., 1996). Within 10 years, 28.1% of those who had been admitted because of a suicide attempt were readmitted for a further attempt, and 4.6% died by suicide (Gibb, Beautrais, & Fergusson, 2005). These findings indicate that those who are admitted to hospital following a suicide attempt are a group at high and enduring risk for further suicidal behavior and poor outcomes. They are an easily identifiable group of individuals who require short-term crisis interventions and longer term surveillance and management.

Psychiatric illness is a major risk factor – predominantly affective disorders, anxiety disorders, psychosis, and personality disorders (Beautrais, 2000; Harris & Barraclough, 1997). Affective disorders are present in 50–70% of suicides (Clayton, 1983). Between 25% and 50% of those with bipolar disorder make at least one suicide attempt (Goodwin

& Jamison, 1990), and their lifetime risk of suicide is 15% (Bostwick & Pankratz, 2000). In depression, patients may typically have negative cognitions about themselves and be subject to feelings of shame and guilt. They have a tendency to withdraw socially, and they have difficulties in confiding in others, which will increase the risk. Severe somatic illness increases the risk: Up to 50% of suicide attempts (especially in elderly people) have been associated with physical illness, often associated with chronic pain or physical disability (Stenager & Stenager, 2000).

Certain *demographic factors* are associated with increased suicide risk. Suicide rates are generally higher among males than females, but there are wide variations in the male to female ratio across countries. Attempted suicide is most frequent among adolescents and young adults (Armin Schmidtke, Sell, Wohner, Löhr, & Tatsek, 2005), while increasing age is a risk factor for completed suicide (Bertolote & Fleischmann, 2002). In the WHO/EURO multicenter study, being single, isolated, divorced, or widowed was associated with higher rates of attempted suicide. Other risk factors include unemployment and recent changes in the living situation.

Individual factors are related to a person's biography. Early traumatic experiences, such as sexual abuse, physical abuse, violence in the family, emotional neglect, loss, etc., are associated with suicidal behavior in adulthood (Bruffaerts et al., 2010). Stressful life experiences, such as divorce, separation, job loss, failing studies, etc., may act as triggers for suicidal behavior. The stress-diathesis model of suicide (Mann, Waternaux, Haas, & Malone, 1999) encompasses vulnerability factors such as psychiatric illness, familial and genetic components, adverse childhood experiences, and stress factors such as acute psychosocial crises – for example, experiences of loss, failure, and rejection. The concept of epigenetics has in recent years provided a bridge between biological and psychological vulnerability, related to early stressful experiences which can lead to long-term changes in the expression of genes related to the regulation of the hypothalamic-pituitary-adrenal (HPA) axis, and thus to a long-term dysfunctional stress system. Epigenetic factors are thus associated with reduced resilience[1] to stressful life events (Labonte & Turecki, 2010; Roy, Sarchiapone, & Carli, 2007). Furthermore, individuals with high impulsivity scores are more likely to act out on their suicidal impulses (Brent et al., 1994).

Media reporting on suicide can affect the frequency of suicidal behavior, due to an influence known as the Werther effect.[2] This phenomenon can be understood as a form of social learning (Bandura & Walters, 1963). Especially sensational media reports on the suicide of celebrities have been shown to lead to copycat suicides (Schmidtke & Schaller, 2000). Furthermore, sensational media coverage on suicide hotspots can increase suicidal behavior.

Protective factors have been identified. Being married or having children may be protective (Heikkinen, Isometsä, Marttunen, & Aro, 1995). Social skills, communication skills, self-confidence, the ability to seek help, or good coping strategies may be protective. Life-oriented perspectives, in private or work, are protective, as is an intact social network associated with high emotional and social support. Religious service attendance

[1] Defined as the ability to overcome crises by recourse to personal and socially mediated resources and to use this as a stimulus for development (Comer & Sartory, 1995).

[2] *Werther effect* is a term used in media research to describe the imitative effect that suicides by celebrities can have in a population. The term can be traced back to Goethe's novel *The Sorrows of Young Werther* dating from 1774, which is said to have launched a wave of copycat suicides.

is a protective factor (Kleiman & Liu, 2014; Stack, 1983). Regarding sociocultural factors, for instance belonging to the middle or upper social class, is related to lower rates of suicide and attempted suicide (Bronisch, 2008).

2.3 Models of Suicidal Behavior

Different models to explain suicidal behavior have been developed. Essentially, a distinction can be made among *medical, biological, sociocultural,* and *psychological models.* None of these can claim to be comprehensive.

2.3.1 The Medical Model

From the medical perspective, suicide and attempted suicide are a consequence of mental illness. This is substantiated by the findings of various retrospective studies into suicide, according to which 93% to 95% of suicide cases had symptoms fulfilling the criteria of a psychiatric diagnosis (Conwell et al., 1996; Harris & Barraclough, 1997; Robins, Murphy, Wilkinson, Gassner, & Kayes, 1959). Affective disorders have been found to be present in 50% to 70% of suicides, followed by substance abuse, personality disorders, and schizophrenia (Clayton, 1983). For attempted suicide, the picture is rather different. While the psychopathology in patients being admitted because of medically serious suicidal acts is largely similar to that in completed suicide, major depression appears to be less frequent in attempted suicide, especially in adolescents and young adults (Gibb et al., 2005; Michel, 1988). In the young, suicide attempts are often related to acute stress reactions – for example, those triggered by interpersonal problems.

Support of the medical model came from the so-called Gotland study (Rutz et al., 1989). In this study, general practitioners on the Swedish island of Gotland were given specific training in diagnosing and treating depression. In the following years, the suicide rate was significantly reduced, in contrast to rates on the Swedish mainland (see Section 2.6). Unfortunately, this study has never been replicated.

Clinical experience shows that too often symptoms of depression remain unrecognized (Freeling, Rao, Paykel, Sireling, & Burton, 1985), and consequently patients do not receive adequate (and life-saving) antidepressant treatment. Despite major efforts in training, the problem has remained largely unchanged, and several studies have confirmed earlier reports of alarmingly low rates of prescriptions for antidepressants among people committing suicide (Isacsson, Holmgren, Wasserman, & Bergman, 1994; Isometsä, Henriksson, Heikkinen, Aro, & Lonnqvist, 1994). One reason for the underdiagnosing of depression is that the signs of depression often are not obvious. Physical complaints may cover the typical symptoms of depression: Pain, autonomic symptoms, and gastrointestinal symptoms are common in depressed patients (Lin, Von Korff, & Wagner, 1989).

Typical Symptoms of Depression

- Persistent sadness or low mood
- Loss of pleasure
- Loss of interest
- Poor concentration or indecisiveness
- Low self-confidence
- Guilt or self-blame
- Social withdrawal
- Hopelessness
- Suicidal thoughts or acts
- Sleep disorders (early waking)
- Fatigue or low energy
- Loss of appetite; or (seldom) increased appetite
- Weight loss
- Loss of libido
- Psychomotor retardation or agitation
- Physical symptoms such as headaches or back pain, palpitations, gastrointestinal symptoms, difficulties with breathing

Depending on the intensity of the symptoms, depressive episodes are classified as mild, moderate, or severe. In a mild depressive episode, the patient usually feels unwell but, despite some loss of performance, is still able to carry out personal and professional responsibilities. In moderate depression, a person will have difficulties in coping with everyday demands at home and work, while in severe depression, the person will have serious functional impairment. A severe depressive episode may also be accompanied by psychotic symptoms, such as delusions of guilt or poverty, or hearing accusatory or defamatory voices.

Adapted from the *International Classification of Diseases* (10th revision, 2011b).

The traditional biomedical model is a causal one, which assumes that pathology is a result of a "fault in the system." In recent years, the role of depression as the main focus of suicide prevention has been questioned (Nock, Hwang, Sampson, & Kessler, 2010). Linehan (2008) argued that reducing symptoms of mental disorders is not sufficient to reduce the incidence of suicide attempts or suicides. Clinical experience shows that, although depression in particular and mental disorders in general are well-established risk factors for suicide, in the psychological treatment of suicidal individuals, it is not helpful to see suicide and attempted suicide as mere symptoms of a mental disorder.

2.3.2 The Biological Model

Exposure to early and repeated stressors may cause enduring alterations in the organism's physiology, cognition, and emotional response to the environment. The stress system has long been linked to depression and suicide – in particular, the functioning of the HPA axis, which regulates the stress hormones adrenaline and cortisol (see Figure 2). This system reacts to situations threatening homeostasis, with what is known as the fight-or-