

Definitions of Suicidal Behavior

Lessons Learned from the WHO/EURO Multicentre Study

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Abstract. Based on the experience matured during the 15 years of the WHO/EURO Multicentre Study on Suicidal Behavior, this paper provides an *excursus* on main elements that characterize components for definitional needs. It describes the rationale for choosing the initial set of definitions within the study and the subsequent problems and developments. As a result, unifying terminologies are proposed.

Keywords: WHO/EURO Multicentre Study, suicidal behavior, suicide, history, definitions

Introduction

Since 1903, when the first “International Classification of Diseases and Causes of Death” was adopted, suicide has been included in the section dealing with morbidity and mortality from external causes. Reading through the proceedings of the various international conferences to update that classification (roughly every 10 years, until 1994), as discussed by Shneidman (1984), it becomes clear that suicide is a “residual mode,” to be used when the other ones could not be confirmed. The other modes are: Natural (N), accidental (A) and homicidal (H), together constituting the NASH system,

From 1903 until 1948, all pertinent categories were classified under “Conditions produced by external causes” by the means used and phrased as “suicide due to . . .” From 1948 on (ICD-6) and until 1965 (ICD-8), the section was named “Accidents, poisoning and violence,” and the pertinent category was renamed “suicide and self-inflicted injury.” ICD-9, in 1975, named the section “Injury and poisoning” and the category was named “Suicide”; a note explained that it included “suicide attempts; and purposefully self-inflicted injuries.” ICD-10 (1992) created a category of “Intentional Self-Harm” explaining that it included “purposefully self-inflicted poisoning or injury; and suicide (attempted).”

In 1964 Stengel proposed that suicide and suicide attempt referred to two distinct populations. However, strictly speaking, a “true” suicide attempt should refer only to

those who failed to die after having tried to kill themselves. A tentative attempt to overcome this semantic and conceptual snag was the introduction of the expression “suicidal behavior.” This expression, which clearly stems from the behavioral approach predominant in North American psychology, was a “politically correct” move brought forward by feminist scholars who objected to the supposed bias conveyed by the use of “attempt,” mostly seen among women, and implying that women were less competent than men (among which “completed” suicide was more frequent) in “completing” that act (Lester, 1994).

From a logic perspective, the crucial elements to differentiate between suicidal, accidental or homicidal acts (as possible external causes of death, distinct from those from natural causes) are actually two: (1) the locus of origin (self-initiated) and (2) the intention (to cause, or not to cause, death). The outcome, death or injury or nothing, is clearly the result of these; the visible phenomenon is of a more immediate interest to health staff, particularly those working in emergency care settings.

In practice, suicide attempts, when serious enough to need medical attention (and the majority of these acts are *not*, and remain unknown to medical authorities) are mostly cared for at emergency rooms. In those places staff are ordinarily much more concerned with the nature of the injury or intoxication than with the intention at the origin (or cause) of that injury or intoxication. The medical or surgical need is tended for and once this cleared, the patient is either discharged (in the majority of the cases) or referred to further assessment and follow-up (which, in a minority

of cases involves mental health staff). Under these circumstances, the diagnosis recorded will reflect the nature of the injury or intoxication, while medical staff does not investigate the intention behind the act. Depending on the jurisdiction, in all cases of nonnatural death, an investigation is conducted by justice or police.

As a consequence of these practices, most countries have national systems to record, collect, and process information related to suicides (mortality registers) on a permanent basis, but so far no country has an equivalent system specific for suicide attempts (morbidity registers). In a few cases, there are similar registers for injuries and for intoxications, however, few of them reference intentionality, which would allow for a distinction between accidental, criminal, or self-inflicted injuries or intoxication.

The current public health approach, as indicated by ICD-10, is to group all intentional self-harm activities, and use this broad category in the context of both morbidity and mortality. It has the great advantage of being rather descriptive and of avoiding value-loaded terms such as suicide and suicide attempt. However, the assessment of intentionality remains a crucial issue, which not only impacts heavily on sanitary matters but has also legal and criminological implications.

In this paper we accompany the reader through the many existing problems endemic to the field of suicide and attempted suicide nomenclature, trying to explain why these perennially dissatisfy researchers and clinicians. Supported by the experience matured within 15 years of the WHO/EURO Multicentre Study on Parasuicide (Kerkhof, Schmidtke, Bille-Brahe, De Leo, & Lonnqvist, 1994), we examine a number of definitional issues that normally complicate the understanding of suicidal behaviors, and eventually obstruct the progress of suicide research and its logical outcome, suicide prevention.

Suicide mortality was not the main focus of the WHO/EURO study. The priority was instead suicide morbidity (attempted suicides), and this was a result of the alarmingly increasing trends that were affecting Europe during the 1980s. The possible role of attempts as precursor/predictor of subsequent completed suicides was, of course, the ultimate justification for performing the study.

Although in common use and routinely accepted by WHO, in suicidology "mortality/morbidity" emphasizes in an inappropriate way the disease model that is implicit in the use of this terminology. Suicide is a behavior and not an illness; in addition, in most cases suicide attempts represent a kind of "spurious" morbidity, and those who attempt suicide have no intention to die at all, but just want to manipulate their environment. Once more, the role of intention(s) is of critical importance in the clinical/scientific appraisal of suicidal and suicided persons. In this light, it will be of interest to know how the WHO/EURO study group dealt with these issues and what are the outcomes of such a long, cooperative effort in the definitional domain.

The Importance of Consistent Definitions to Different Professional Domains

Each person intuitively knows what he or she means when the topic of suicide arises in everyday conversation. However, the definition of suicide is inherently more complex than the simple words "killing oneself." Although it is doubtful that we will ever be able to construct universally unambiguous criteria to comprehensively characterize suicidal behaviors (and, overall, firmly establish the intention behind them), for scientific clarity it would be highly desirable that the set of definitions and the associated terminology be explicit and generalizable.

A large part of the difficulty in defining suicidal behavior comes from the broad spectrum of outcomes that this term is currently used to describe. Fatal suicidal behavior tends to have societal, clinical, and demographic characteristics that are quite distinct from those of nonfatal suicidal behavior, and this has led to the adoption of a range of terms to try to encompass these differences. The intention to die constitutes an important distinction in many cases and this has prompted the use of alternative terminology, such as in the case of "parasuicide" adopted in the WHO/EURO study.

Terminology and definitions are the two elements that constitute a standard nomenclature (O'Carroll, Berman, Maris, Moscicki, Tanney, & Silverman, 1996), and it is in both of these areas that suicidology is currently confusing. A satisfactory nomenclature of suicide should be applicable and usable both within and across all domains in which it is to be employed, whether the focus is research, clinical practice, public health, politics, or law.

It is argued that inconsistent definitions of variables pose real-world problems. For suicide, these problems emerge in three principal areas: (1) public health (certification of death and calculation of mortality rates), (2) research, and (3) clinical practice. As detailed below, each of these domains has different reasons for needing a standard definition of suicide and consequently, differing applications for the definition.

Discussions regarding a lack of consistency in terminology and definitions for suicidology have predominantly centered on the possibility that suicide mortality rates are over- or underestimated regionally, nationally, and internationally (Barraclough, Holding, & Fayers, 1976; O'Carroll, 1989). Cultural and sociodemographic differences provide important clues regarding the propensity to suicide in different populations. The accuracy of the information gathered is crucial to quantifying these trends.

The process of death certification has been flagged as one area in which biases can influence mortality rates. It is often unclear whether the death was self-inflicted, and it is even more complicated to determine *post hoc* what was intended (O'Carroll, 1989). Cases of suicide are, therefore,

not always clear-cut, there is often assumption and guesswork involved, and without a consistent set of criteria for determining suicides versus what should be classified as accidental or homicidal, the guesswork involved is magnified.

In addition, there are numerous pressures on professionals that may influence appraisals, including societal and religious prejudices, and the expected impact of a suicide verdict on the victim's family (Barracough et al., 1976; Schneidman, 1981). Alleviating the distress and feelings of guilt for survivors, allowing widows to collect their husband's life insurance money, the possibility of the suicide not being buried with full religious rites, and religious beliefs that suicide is a sin leading the family of a suicide victim to be shunned from the community, may each be seen as good reasons for not arriving at a true verdict (De Leo, Bertolote, & Lester, 2002). Consequently, much research effort has been devoted to examining the consistency with which coroners, pathologists, and other officials involved in cause of death identification make their decisions.

One of the very few international comparisons on death certification procedures specifically in relation to suicide was concluded in 1974 under the auspices of the WHO, and looked at both the variations between countries and between certifying authorities (Brooke & Atkinson, 1974). Results of the questionnaire, which was completed by officials in 24 participating countries, suggested that as elements of the classification process differ, so too will suicide statistics. The main areas of variation between countries were found in the qualifications of the officials involved, level of appointment and supervision, the additional inquiries undertaken, examinations and autopsies conducted, tools available in the fact-finding process, and the way in which the decision is recorded and information subsequently stored. All of these differences summated to the conclusion that there is considerable international variation in classifying a death as suicide. Just as standard definitions of diseases are effective in improving the consistency of diagnoses and comparability of incidence rates for that disease, the authors recommended that a standard definition would contribute to standardizing the classification of suicides and to reducing biases evident in mortality rates.

Other researchers have focused on international comparisons of suicide rates. For example, Sainsbury and Barracough (1968) measured the suicide rates of immigrants to the United States and demonstrated that these were in the same rank order as the rates reported in their country of origin. More recently, Lester (1992) conducted a comparison of the suicide rates of 15 countries with the rates for undetermined and accidental deaths, to establish whether discrepancies could account for between-country differences in rates. This analysis revealed few differences and Lester concluded that although miscounting may occur, it is unlikely to constitute a problem of a magnitude that would impact rates adversely.

Further investigating the accuracy of suicide mortality

rates, county or within-country comparisons of suicide classifications have been conducted. These studies tend to evidence a consistency in verdicts despite the lack of a common definition, and this persists both across regions and countries (Barracough et al., 1976; Sainsbury & Jenkins, 1982). For example, Farberow and colleagues (1977) examined coroners' offices in 191 counties in the United States to determine whether the between region variation in suicide rates resulted from characteristics of the coroners' offices rather than real differences in rates. They found that in the larger counties biases introduced by officials had less impact than for the smaller counties. Taken together, these findings suggest that despite fears that suicide mortality rates are, at least partially, socially manufactured, this is not so far-reaching as to invalidate official statistics.

A WHO working group convened in 1981 to determine the validity and reliability of studying trends in suicidal behavior. After examining the findings cited above and other similar studies, they concluded that there are true differences operating, and that continuing to collate official suicide data and examine relative differences between rates is worthwhile. Though they expressed a sufficient degree of confidence in mortality statistics, the group recommended persistence in considering and analyzing suspected biases, and advocated the benefits that a standard nomenclature for suicide would have for this area (WHO, 1982).

Overall, the existing research paints a generally promising picture regarding the validity and reliability of suicide statistics. This said, we must remember that however small the effect, any bias is potentially damaging. Adopting a standard definition of suicide and suicidal behaviors will have a clear positive impact for the legal domain, reducing error and increasing the accuracy of suicide mortality rates. In turn, the correct determination of suicide deaths contributes to an understanding of the risk factors surrounding suicide through the direction of research and targeting high-risk groups (Rosenberg et al., 1988).

Even more so than for fatal behaviors, morbidity statistics counting nonfatal suicidal behaviors are seen as inherently containing error, and as only "estimates" of the real situation. Unlike suicidal behavior that ends in death, there are numerous physical outcomes and degrees (and types) of intention that are associated with nonfatal suicidal behavior. This adds to the complexity of calculating incidence rates and heightens the importance of consistent definitions. In compiling statistical information, the following categories have usually been adopted:

- *Admissions* – The number of times a case is admitted to a health care unit, regardless of the number of admissions of the same case in a single year.
- *Patients* – Each case is counted once only, regardless of how many admissions there were in that given year.
- *First-ever attempts* – Cases are counted only once at the time of their first attempt (WHO, 1982).

However, whether or not a case is counted depends on whether or not they present to a health care professional following their attempt.

Research in suicidology is a second area plagued by existing definitional obfuscation (Smith & Maris, 1995). In a recent review, Santa Mina and Gallop (1998) highlight the pervasive absence of definitional consistency and the impact of this deficiency on research, reporting that the majority of studies lack clear definitions of terminology used. Other reviewers have reported similar findings; for example, in each study reviewed by Ivanoff (1989) an idiosyncratic definition was employed. Most notably, this lack of consistent definitions contributes to a lack of comparability between studies (Linehan, 1997). Therefore, because suicidal behavior is a complex phenomenon, and there are numerous subtypes of suicidal acts, an additional element of complexity is added to the problem.

Thirdly, in a clinical setting clarity of terminology is essential to precise assessment, documentation of symptomatology, and communication about patients between professionals. Measures of suicidality cannot be valid or reliable if they are not appropriately or consistently defined (Muehrer, 1995; O'Carroll et al., 1996). A lack of standard nomenclature is, therefore, detrimental to clinical practice in the application of studies on treatment effectiveness and risk assessment (Rudd, 1997). The treatment chosen may not prove effective or relevant for a particular patient if their characteristics differ in a significant way from those of the sample utilized in development of the treatment. This leaves open the dangerous likelihood of relapse into the suicidal crisis. Similar, and perhaps more serious, is the importance of a consistent set of terms and definitions to risk assessment. In this case it is possible that a client will be wrongly assessed at a low level of risk, and such clinical misjudgments may end fatally.

In terms of the outcomes of interventions, realizing the aims of effective clinical intervention and preventative campaigns is impossible without a solid definitional foundation. Silverman and Maris (1995) note that for interventions to be successful the extent of the problem must first be clarified, as well as the target group, and then treatment and delivery strategies must be developed. Overall, consistent and clear definitions provide a strong basis for the development and provision of effective clinical care (Rudd, 1997).

Historical Definitions of Suicide¹

The word "suicide" was first introduced in the 17th century, said to be derived from the Latin words *sui* (of oneself) and *caedere* (to kill). Apparently, Sir Thomas Browne – a physician and a philosopher – was the first to coin the term

suicide in his *Religio Medici* (1642). The new word reflected a desire to distinguish between the homicide of oneself and the killing of another (Minois, 1999).

The conceptualization of suicide has changed throughout history with popular perception, and this has shaped what is currently defined as suicide. In antiquity and the early Roman culture *mors voluntaris* was not only accepted but at times recommended. It has to be noted, however, that especially in Rome, the rules were in force only for free citizens, i.e., slaves were not allowed to kill themselves (if a newly bought slave killed himself, the new owner was entitled to have his money back!).

A first important cultural shift happened with the coming of Christianity and the increasing numbers of martyrs (the so-called "Donatists"), who turned out to be a more serious threat to the young Christian community than the cruelest persecution by the Romans. As Alvarez wrote: "It culminated in the genuine lunacy of the Donatists, whose lust for martyrdom was so extreme that the Church eventually declared them heretics" (Alvarez, 1972). In fact, in 348 AD the Council of Carthage condemned voluntary death for the first time in history because of Donatism, which praised the practice (Minois, 1999). After the Council of Arles, in 452 AD, the Church also condemned the suicide of all *famuli* (slaves and domestic servants), giving ground to procedures such as the confiscation of all goods of the suicided person.

This negative view continued, spurred by both law and religious influence, and the Councils of Braga (563) and Auxerre (578) ended by condemning all types of suicide and forbidding commemorative offerings and masses for suicides (Minois, 1999). Harsh penalties for suicides and their families existed during the Middle Ages. Suicide was viewed as a criminal act and those who attempted suicide were placed on trial. Courts of the time distinguished between two verdicts, *non compos mentis* for the innocent madman, and *felo de se* for those "felons of themselves" judged to be in violation of the laws of God and man (MacDonald, 1989). However, the popular conception of suicide shifted progressively away from criminality. Influential thinkers such as Emile Durkheim and Sigmund Freud led to an emphasis on the impact of external influences and the embrace of a more sociological and psychological concept of suicide. Since then, there have been many attempts to reach a consensus on the definition of suicide (see Table 1), yet, thus far, there is little agreement on what aspects are important for inclusion in a definition of suicide.

A number of common key aspects emerge from these definitions: The outcome of the behavior, the agency of the act, the intention to die or stop living in order to achieve a different status, the consciousness/awareness of the outcomes. In addition, two important conceptual issues emerge, namely, the impact of a theoretical orientation and of cultural influences. The cross-cultural design of the WHO/EURO Multi-

¹ This covers only European and North-American countries and literature and no other cultural-geographic areas.

centre Study heightened the importance of these characteristics of the definition. Numerous suicidologists from varied backgrounds constituted the group responsible for implementing this project; the definition settled on must have reflected and allowed for this diversity. In the same vein, retaining a culturally neutral definition served to facilitate the intended international comparisons.

Some of the differences in the definitions outlined in Table 1 stem from the distinct theoretical approaches of the authors. For example, Durkheim's (1897/1951) characterization of suicide is sociological; this is distinct from that of Shneidman (1985) who focuses on the psychological dimension, and Baechler (1980) who emphasizes the existential one (Maris, Berman, & Silverman, 2000). The theoretical perspective explains the basis of the behavior. However, definitions are a description of the concept rather than an explanation, and should not be guided by theory (Maris et al., 2000). A similar approach guided the choices of the WHO Working Group: A theoretical basis for the definition of suicide should have not been the driving force, as for at least two reasons it could have actually hindered the goal of communication. First, those not adhering to the particular theoretical perspective would have been less likely to accept the definition. In fact, for a nomenclature to be useable, it must be applicable across all theoretical perspectives. Second, if the theory is superseded, or becomes less popular, then the definition also becomes obsolete and the desired definitional consistency is disrupted. The most valuable definition is, thus, one that is theory neutral.

Similarly, a definition for suicide should also be free of value judgment and remain culturally normative. Both of these characteristics serve to facilitate effective and precise communication. Exemplary of such value judgments is, for example, the German word for suicide, *Selbstmord*, which translates literally to "self-murder" (the same holds true for Scandinavian countries). If suicide is defined as a crime, or as immoral, then the way toward unbiased discussion and research practice is impeded (Mayo, 1992). Cultural differences can also imbue a definition of suicide with a value judgment. For example, Stack (1996) explains that in the Japanese culture, suicidal behavior is generally accepted, particularly in the face of shame. Such cultural differences in the attitudes toward suicidal acts clearly question the adequacy of a universal definition. A workable solution is retaining a culturally normative definition for suicide. This should be broad enough so as to be applicable to a range of belief systems and, concurrently, specific enough to give an adequate description of the characteristics involved.

The WHO Working Group proposed to adopt a standard definition to be implemented in each site for the study in an attempt to take these issues into consideration. The definition of suicide adopted was as follows:

Suicide is an act with a fatal outcome which the deceased, knowing or expecting a fatal outcome had initiated and carried out with the purpose of provoking the changes he desired (WHO/EURO, 1986).

Table 1. Frequently reported definitions of suicide

"All cases of death resulting directly or indirectly from a positive or negative act of the of the victim himself, which he knows will produce this result" (Durkheim, 1897/1951).

"All behavior that seeks and finds the solution to an existential problem by making an attempt on the life of the subject" (Baechler, 1980).

"Suicide is a conscious act of self-induced annihilation, best understood as a multidimensional malaise in a needful individual who defines an issue for which suicide is perceived as the best solution" (Shneidman, 1985).

"Death arising from an act inflicted upon oneself with the intention to kill oneself" (Rosenberg et al, 1988).

"Self-initiated, intentional death" (Ivanoff, 1989).

"The definition of suicide has four elements: (1) a suicide has taken place if death occurs; (2) it must be of one's own doing; (3) the agency of suicide can be active or passive; (4) it implies intentionally ending one's own life" (Mayo, 1992).

"Suicide is, by definition, not a disease, but a death that is caused by a self-inflicted intentional action or behavior" (Silverman & Maris, 1995).

"The act of killing oneself deliberately initiated and performed by the person concerned in the full knowledge or expectation of its fatal outcome" (WHO, 1998).

As stated in the Introduction, the central focus of the WHO/EURO Multicenter Study on Parasuicide (the initial name of the study) was the incidence of nonfatal suicidal behavior. The task of the group was now to expand the definition to include nonlethal counterpart behaviors while retaining the link between fatal and nonfatal suicidal acts and the characteristics established in this definition of suicide. The primary difficulty in successfully achieving this goal revolved around the intentions behind the act. That is, not all attempts to suicide are failed suicides, there are probably many more cases that are manipulative or an attempt to seek attention (Bille-Brahe, Schmidtke, Kerkhof, De Leo, Lonnqvist, Platt, & Sampaio Faria, 1995). The way that intentions were dealt with is a unique characteristic of the Working Group's definition of "parasuicide," a term first introduced by Kreitman in 1969. For the purposes of the study, parasuicide was delineated as:

An act with a nonfatal 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 (WHO/EURO, 1986).

There were a number of advantages and disadvantages associated with acceptance of the term parasuicide. As Bille-

Brahe, Schmidtke, Kerkhof, De Leo, Lonnqvist, & Platt (1994) describe, there are at least four ways in which the term has been used in practice:

1. Parasuicide is a subcategory of attempted suicide characterized by low levels of intention to die. This perspective is favored in America.
2. Attempted suicide is a more specific subcategory of parasuicide characterized by a strong intention to die. This perspective is favored in Europe.
3. Parasuicide and attempted suicide are mutually exclusive, the former describing cases with low suicidal intent, and the latter used to label cases where the intent to die is clearly evident.
4. Parasuicide and attempted suicide are used interchangeably, recognizing the difficulties inherent in ascertaining intent.

The WHO/EURO Group favored the fourth interpretation of the term, and expected that this would go a long way toward solving the definitional problems that were currently facing the area. This was appealing for three reasons: First, because of the lack of implication regarding intent, it remained easy to operationalize; second, it did not restrict the classification of cases on the basis of physical consequences; and third, it retained the link between nonfatal suicidal behavior and suicide (Bille Brahe et al., 1994).

As the study progressed, the disadvantages of the term became more apparent. In addition to the confusion it created in both research and clinical practice, the term parasuicide appeared to be plagued by semantic difficulties, not being easily translatable into other languages (Bille-Brahe et al., 1994). To begin with, the prefix *para* causes problems: In several languages it means "similar to" or "resembling to," but also means "mimicking," "pretending;" a fact that is not true of all nonfatal suicidal behaviors. The nature of this term seems to address quite well those acts with no intention to die, but not very well what is commonly known as "failed suicide," where the intention to die was present but for reasons outside the control of the individual, the attempt at death was thwarted.

In choosing and defining a term, desirable and undesirable connotations must be considered. For example, the verbs "commit" and "attempt" are often paired with "suicide," adding a value judgment of wrongdoing or failure to the act. Such connotations impede the path of unbiased discussion and research practice (Egel, 1999). Substitute terminology that labels the act by the method, such as "self-poisoning" or "self-cutting," represents the official international approach since 1903, well before WHO was created, and applies to both suicide and attempted suicide. However, habitual or self-mutilating behaviors encompassed in this terminology are distinct from suicidal acts, and it would be desirable that this be reflected in definitions and terms used to depict suicidal behavior (Suyemoto, 1998).

The more generic "self-harm" (particularly popular in UK, South Africa, Australia, and New Zealand) does not

seem appropriate because it has been broadened in common usage to cover other behavior patterns that have nothing to do with suicidal behavior, thus inevitably implying the absence of an intention to die (Linehan, 1997). In addition, in the words of Kreitman: "Terms such as deliberate self-harm, self-injury, or self-poisoning . . . neglect the very real association that exists between attempted suicide and completed suicide" (Kreitman, Philip, Greer, & Bagley, 1969).

By 1994 the WHO Group had realized the extent of the problems associated with the term parasuicide, and this coincided with the publication of the first book on the study with "attempted suicide" rather than "parasuicide" in the title (Kerkhof et al., 1994). Actually the subtitle of the volume also contained the term "parasuicide," and this was a way of both acknowledging the inherent difficulties in adopting a standardized terminology and promoting the interchangeability of the two terms, as suggested by the Steering Group of the study. A few years later, in 1999, the group embraced an outcome-based orientation to the definitions as a solution to these problems, proposing the use of the terms "fatal" and "nonfatal" suicidal behavior (De Leo, Bertolote, Schmidtke, Bille-Brahe, & Kerkhof, 1999). This encompasses the act while also respecting that intention is not necessarily always present. In acknowledgment of the increasingly evident difficulties related to the term parasuicide, the WHO/EURO Multicenter Study on Parasuicide was formally renamed to the WHO/EURO Multicenter Study on Suicidal Behavior. The assembly of principal investigators of the study ratified the change on November 11, 1999, immediately after the 20th World Congress of the International Association for Suicide Prevention in Athens.

Constructing a Definition of Suicide

As underlined by Mayo (1992, pp. 92), "a suicide has taken place if death occurs." A dead body, that is, the fatal outcome of the action or behavior, is the first element that incontrovertibly qualifies all definitions of suicide. At the same time, this kind of outcome creates a neat separation from all other behaviors not ending in death, the outcome of which is, thus, nonfatal. The WHO/EURO definition of suicide reported above started with this essential element: "*Suicide is an act with fatal outcome.*"

Agency of the act resulting in suicide is also an element common to many definitions. For example, all definitions listed in Table 1 specify that the subject instigated the act resulting in the end of his or her own life. This tends to be worded in two distinct ways: That the act is either self-initiated or self-inflicted. The first implies that the subject instigated but not necessarily carried out the behavior, while the second suggests that the subject both initiated and conducted the act. This is an important distinction, because expressions of the second type exclude cases of what has been termed "hetero-suicide," in which the suicide victim

dies by another's hand (Mohandie & Meloy, 2000). Although it is more frequently the case that the suicidal subject is also the one who engages in the suicidal act, this is not the aspect of agency that is most relevant to a definition of suicide.

As Durkheim's (1897/1951) definition specifies (see Table 1), the act undertaken by the subject to achieve death may be direct or indirect, active or passive. A direct or active act is one in which the deceased was also the agent of their death, the one who, for example, swallowed the pills or pulled the trigger. An indirect or passive suicide would involve some inaction on the victim's part, such as failing to move out of the path of an oncoming vehicle, or failing to comply with police instructions in order to avoid the use of deadly force ("suicide by cop"). Hence, it seems that the most important element of agency in relation to suicidal acts is the responsibility for the outcome, not the performance of the behavior, and we can conclude that suicide should be defined as an act that is self-initiated.

However, responsibility for the act is not sufficient to distinguish suicide from other behaviors. There are many other acts that are self-initiated and potentially fatal, such as self-harm and habitual behaviors, which are clearly distinct from suicide. In particular, self-harm is a broad category, often used to describe situations ranging from substance abuse, eating disorders, and reckless behavior to mutilation and nonfatal suicidal acts (Santa Mina & Gallop, 1998). In addition, self-mutilation is often repetitive and habitual. Such behaviors do not have the intentions of suicidal behaviors and, thus, are qualitatively different (Bille Brahe et al., 1995). Self-harm may also be differentiated from suicidal acts in terms of the way in which the individual perceives the act, and the function that the act serves for the individual (Suyemoto, 1998). These would not potentially lead to eventual suicide, and death as a result of these behaviors would be classed as accidental, not suicidal. For these reasons self-harming acts that are habitual should be excluded from a definition of suicide and suicidal acts.

Intent to die or stop living is a characteristic that distinguishes suicide from habitual and manipulative behaviors, and should be considered for inclusion in a definition of suicidal behavior. Without consideration of the individual's intention, suicide cannot be easily distinguished from an accident. Suicidal intent, or intent to die, constitutes the second criteria for determination of death by suicide according to the "Operational Criteria for the Determination of Suicide" (OCDS: Rosenberg et al., 1988), and is also a key element in many other definitions of suicide (see Table 1). This is perhaps the most contentious aspect of the definitional debate on suicide and nonfatal suicidal behaviors. The inclusion of intent to die can determine the scope and applicability of a definition for suicide. If intent is judged to be important, the definition risks being too narrow: Not everyone who suicides seeks death. On the other hand, if intent is absent from a definition then it is too broad and does not exclude self-injurious and repetitive behaviors

(Allen, 2000). The fact that intention is included in definitions such as those in Table 1 has received much criticism, and the interpretive nature of this construct has led to numerous problems, including operational and assessment difficulties.

In particular, definitions of suicide that include intent have been criticized for being nonscientific. Egel outlines the criteria for scientific definitions and claims that suicide, at present, does not meet these:

"The bedrock of scientific method is that (1) what there is can be experienced, (2) what there is can be described in a hypothetical form sentence, and (3) whatever is the consequent of an event hypothesis must be observable" (Egel, 1999, pp. 393).

The intentions of the suicidal individual do not meet the third criteria because they are not directly observable (Egel, 1999). In addition, they can be falsified. What is intended by a suicidal act remains in the mind of the individual. If the act has a fatal outcome, then we are left to infer what was intended, unless a suicide note is found. If the act has a nonfatal outcome, we may ask the individual what they meant, but this is associated with pitfalls, too. Memory is not infallible and is filtered through one's interpretation. This is especially true of those emotionally charged memories often connected with a suicidal crisis. Furthermore, suicide attempters may deliberately deny or minimize their previous intentions.

Given that assessment of suicidal intent requires interpretation, which is often from an outsider's perspective, it has been labeled vague and, thus, not easily measurable (Mayo, 1992). There are a number of additional reasons why "intentional" may represent an unsatisfactory term. First, it entails an element of degree, and, thus, remains to be qualified (Mayo, 1992). It relates to the ever-prevalent ambivalence surrounding death by suicide (Maris et al. 2000). Shneidman (1981, pp. 206) argues that the "prototypical psychological picture of a person on the brink of suicide is one who wants to and does not want to." This is also in line with Freudian theory, which suggests that within an individual, life and death wishes co-exist to varying degrees. In this context, the question should be raised regarding how much more must the suicidal subject wish for death rather than life, in order for their death to be classified as a suicide. For example, if quantification were possible, do we distinguish between a suicide who wished for death 51% of the time and life 49% of the time, and another whose wishes balanced at 99% to 1% (Maris et al., 2000)? The suicidal individual is rarely 100% intent on dying, therefore, it would be more accurate to assert that he or she does not *want* to die, but death is just a more appealing option than living.

The corresponding fact that there is not simply one type of intention, that there may be any number and quality of intentions within a single person at any time (Mayo, 1992), is a second reason that "intentional" has been criticized as vague and imprecise terminology. Definitions of suicidal phenomena typically do not include a specification of what

intentions are being spoken of, simply stating that the act was intentional. On other occasions they may focus on the subject's intent to die; yet both of these may be somewhat misleading. Intent relates to the goals that an individual has in using a certain method to achieve a particular result (Marris et al., 2000). Thus, although the action is intentional, it need not be interpreted as the goal. Suicidal intent is also not equivalent to the physical outcome of suicidal acts. That is, not all suicide survivors desired to live and not all suicidal deaths were intended (Canetto & Lester, 1995). From a psychological perspective the most important aspect of suicide is not death. Shneidman (1985) defines the intention at the core of suicide as the intent to cease, noting that suicide is more about ending suffering than death. From this perspective suicide is associated with the intention to achieve cessation of suffering using death as the means. The ultimate goal is to stop future consciousness of ongoing suffering.

In many cases, intention "to cease suffering" distinguishes more acceptably between suicidal acts and nonsuicidal acts than the mere "intention to die" does. This might be the case of martyrs, for example. For them death is certainly intentional but cessation of suffering seems to overcome the intention to die. In fact, martyrs may want to provoke the cessation of suffering of the group of individuals to which they belong (and of themselves or both). In addition, martyrs may intend to achieve some greater good by saving other lives.

Similarly, though death may be intentional, in some suicides this is not necessarily the case. Often, suicidal acts are a frantic attempt at improving one's life, not ending it (Mayo, 1992; Shneidman, 1981). Nonfatal suicidal acts in particular highlight the irrelevance of intent to die, though we argue here that these acts should still be classified as suicidal. For example, suicidal acts/gestures and attempts are undertaken with the intention to stop some unbearable situation. Death is not usually intended, but may be a consequence of the action. If intent to die was the criteria for determining suicide, then this would make such deaths accidental; this is, however, not in line with the common usage of the term suicide (Mayo, 1992).

Suicidal intent included as a definitional element of suicide makes conceptual and theoretical sense, and is perhaps regarded as the defining factor of suicidal acts. To remain useful, however, the constituents of a definition must be operationalizable. Intentions have proven difficult to concretize or quantify as a consequence of their interpretive nature and vagueness (Devries, 1968). Determining the intentions behind suicidal action requires a psychological assessment, which officials involved in certifying death are not typically trained to conduct. Furthermore, other parties, such as relatives or friends, are not always willing or available to provide the required information (O'Carroll, 1989). Correlates such as the lethality of the act or the method employed are frequently used to imply intent to die in the absence of appropriate measures. Since these are not always reliably associated or highly correlated with intent,

these often prove inadequate and this practice of assumption compounds the error (Linehan, 1997).

In the context of the overt characteristics only, the meaning of the behavior often remains unclear. Intention places suicidologists in a quandary: It is a necessary element of suicide, without which the behavior would be classified as accidental, but the problems of realizing this concept seem insurmountable. Despite this, an "absence of evidence is not evidence of absence" (Rosenberg et al., 1988, pp. 1446), and to omit intent from a definition of suicide is to leave out a crucial part of the definition. Such an omission would have dire consequences, for example, in a research setting where an omission of assessment of suicidal intent can lead to unacceptable levels of heterogeneity among subjects (Linehan, 1997).

For suicide to be intentional, it implies an awareness (or at least the expectation) of the potentially lethal consequences (Rosenberg et al., 1988). It is this consciousness that distinguishes between a person who deliberately jumps off a bridge knowing that it will most likely end fatally, and another who flings themselves off a bridge in the midst of a psychotic episode. The definitions used in the WHO/EURO Multicentre Study (see above) include a number of important elements, particularly that the action is deliberate and the individual is consciously aware of their behavior (Bille-Brahe et al., 1995). The rationalist perspective of a conscious act is also included in the definitions proposed by Durkheim (1897/1951) and Shneidman (1985). This awareness and understanding of potential death excludes cases such as the mentally retarded, many of those affected by psychosis, and others who do not fully comprehend the consequences of their actions.

Taken together, the arguments supporting the inclusion of intent in a definition of suicide are strong and the problems of operationalization are outweighed by the importance of the concept. This measurement difficulty may be alleviated by the use of established measurement techniques and scales. These include Beck's Suicide Intent Scale for assessing intent in nonfatal suicidal behavior (Beck et al., 1974), and employing retrospective indexes (e.g., Jobes et al., 1987) or, in the case of fatal suicidal acts, by psychological autopsies. For researchers and clinicians it is also important to take into account the intention to cease suffering in addition to the traditionally measured intention to die, and to measure other interrelated factors such as awareness of potential death, and previous suicidal ideation, which can provide further clues to presence of intent. Thus, intentions can be accepted as a central aspect of suicide.

Suicide may represent the solution to a problem, or a way to achieving a particular outcome. For example, among the definitions cited in Table 1, Baechler (1980, pp. 74) states that suicide "seeks and finds the solution to an existential problem," Shneidman (1985, pp. 203) asserts that the suicidal individual "defines an issue for which suicide is perceived as the best solution," while the Working Group for the WHO/EURO Multicenter Study (1986) de-

fines parasuicide as “aimed at realizing changes which the subject desired” (but the same concept is expressed in the suicide definition).

The death attained by suicide is a means to an end, not necessarily an end in itself. As eloquently outlined by Baechler (1980), death is not viewed by the potential suicide as a voluntary choice, but as the only option available that would provide a change to the current, unaffordable situation. It is, thus, not appropriate to define the act as willful or as desired. Had the individual perceived other available solutions, the situation would not have resulted in an attempt on the life of the individual, or in their death. Clearly, these considerations need to be seen in the perspective of the individual who takes suicidal action, who feels that a choice has to be made among (almost) equally unwanted alternatives.

The definitions of parasuicide and suicide proposed by the WHO Working Group have been criticized because of their use of the wording “desired changes.” In light of what was discussed above, we might then propose a partial rephrasing of it by substituting “wanted” for “desired” (see below), which is both semantically and conceptually more supportive of most interpretations.

This minor adaptation seems to be quite close to Shneidman’s concept of “best solution” (1985), and at the same time it better emphasizes the situation of coercion that suicidal individuals face in their fatal dilemma. However, more than 15 years from its initial formulation (1986), the WHO/EURO definition of suicide still retains its validity by possessing all fundamental requirements of a modern enunciation: Responsibility, awareness of the potential lethality of the act, intention to die/provoke those changes that the subject is assumed to prefer to living conditions otherwise perceived as unbearable.

In conclusion, after reconstructing all developmental stages and rationales that guided the choices made in constructing the definition of suicide, we are incline to repropose – slightly modified – a quite similar enunciation:

“Suicide is an act with fatal outcome, which the deceased, knowing or expecting a potentially fatal outcome, has initiated and carried out with the purpose of bringing about wanted changes.”

The addition of “potentially” (fatal outcome) is another difference from the 1986 WHO/EURO definition. It is intended to encompass those cases in which an individual, with ambivalence or wanting to influence others, takes the risk of death in a suicide attempt and dies. His/her intention to die was not strong, and the attempt might have ended in survival as well, depending on coincidental factors, but death is instead the outcome. Similar cases are actual suicides, but a proper categorization through the previous definition can be quite problematic. The case of risk-taking in extreme sports or stunts remains excluded from this definition, because this behavior is not aimed at bringing about changes.

Toward a Nomenclature for Suicidal Behavior

The first step in expanding our definition to form a working nomenclature for suicidal behavior is to clarify precisely the role and characteristics of a successful set of terms and definitions. Addressing the intricacies of an area is not the role of a nomenclature for suicide. As outlined by O’Carroll et al. (1996), a nomenclature forms the basis for, but is distinct from, appropriate classification. This is an important distinction because unlike a classification system, a nomenclature for suicide does not aim to be exhaustive or to precisely mirror reality; the aim is communication, utility, and understanding.

Figure 1 summarizes the nomenclature we are proposing. The key terms are written in bold and become more specific as more elements are introduced. This progression of specificity can be traced visually, from left to right. Similar to the process followed in arriving at our definition for fatal suicidal behavior, the most logical starting point is the observation of the main outcome, that is, if the subject is alive or dead. Then, we need to establish that the behavior was self-initiated, and finally intention to die or stop living is introduced to complete the set of terms.

Lethality may be defined as the medical probability that a behavior, state, or means will end fatally (Maris et al., 2000). In relation to suicidal behavior, lethality (or the physical outcome of the act) relates to the probability of suicidal death or, what Shneidman (1981) terms the “deathfulness” of the act.

There are a number of important limitations in the physical outcome approach that should be considered before we apply this as a criterion for the expansion of our definition. First, the medical seriousness of suicidal acts does not necessarily relate to the definition or meaning of the behaviors. This implies that irrespective of differences in the physical consequences, or the dangerousness of the behavior, fatal and nonfatal suicidal behavior are closely related. The core concepts introduced above, that is, responsibility, awareness, and intention, are definitive across the entire spectrum of suicidality; in this sense the outcome of the suicidal behavior (death vs. life) may be irrelevant. Exemplary of this, and in this case de-emphasizing the centrality of physical consequences, is the inclusion of “aborted suicide attempts” as a category of nonfatal suicidal behavior. Aborted suicide attempts are those in which an individual comes close to enacting a suicidal behavior but does not complete the act and, hence, sustains no injury (Barber et al., 1998). Suicidal acts where the individual suffers injury and those where the individual aborts the act prior to implementation may be highly associated, particularly in terms of the intent to die (Barber et al., 1998). It, thus, appears that the main characteristics of suicidality remain, despite the outcome of the act.

Second, outcome is often positioned as synonymous with the intentions associated with suicide, most notably the sui-

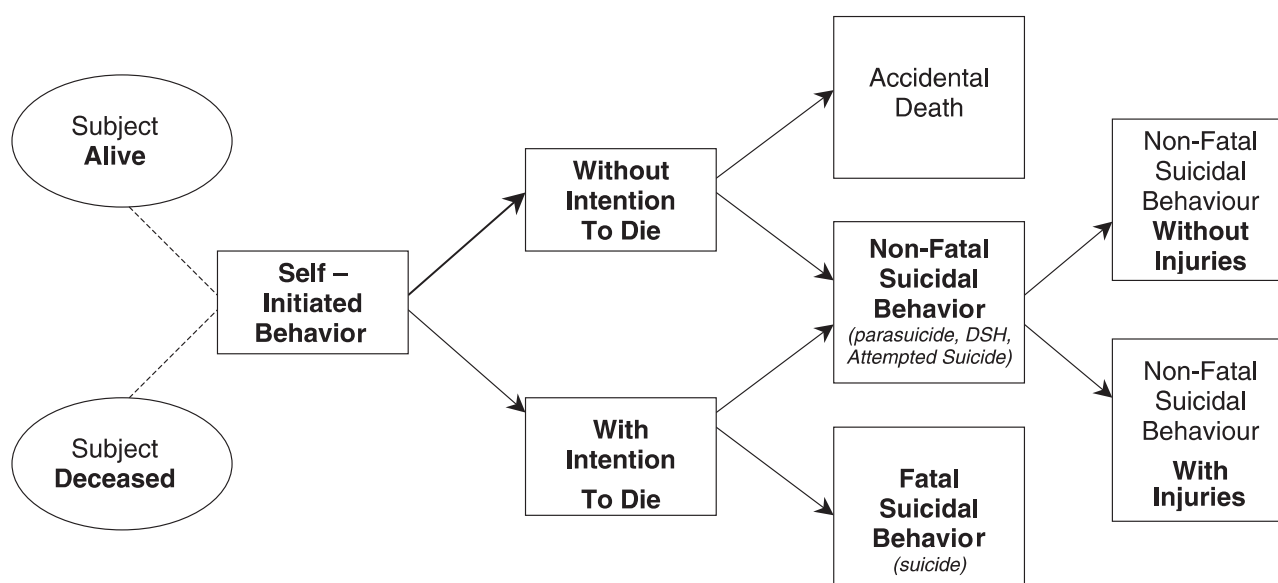


Figure 1. Flow chart of fatal and nonfatal suicidal behavior.

cidal individual's intention to die. The asserted premise of including lethality of the act in our definitions of suicidal behavior is typically that we can infer some kind of meaning based on these overt characteristics, but this is not necessarily appropriate. For example, can more intent be ascribed to an individual who jumped off a 2nd floor balcony and sustained injuries that were not life-threatening, compared to an individual who escaped an attempt unscathed, having been coaxed off a 20th-story building ledge prior to jumping? Intent is only one associated factor and there are a number of varied characteristics that lethality may depend on, including gender, preparation, and knowledge about and access to means. Hence, it is not necessarily true that fatality of attempts correlate with an intent to die (Arffa, 1983; Silverman & Maris, 1995). Rather than defining the meaning of lethality to suicidal behavior, the confusion of outcome and intent instead serves to undermine the importance of the outcome of the act. As a result, it is important to recognize that outcome and intent are not perfectly associated.

There are two arms to any working nomenclature: Definitions and terminology (O'Carroll et al., 1996). Through the combination of these two elements, this nomenclature appears to relate each of the key aspects that define suicide. The remaining terms in Figure 1 expand on this definition through the specification of the possible presence of injuries that, for taxonomic purposes, might be further distinguished in external/visible, or internal/nonvisible (e.g., intoxication).

The proposed nomenclature encompasses the entire spectrum of suicidal behaviors. As a matter of fact, three broad outcomes may be identifiable: Fatal Suicidal Behavior, Nonfatal Suicidal Behavior with injuries, and Nonfatal Suicidal Behaviors without injuries.

Following the suggestion of O'Carroll et al. (1996), intention to die or stop living is quantified here as any degree

that is greater than zero. This acknowledges both the ambivalence in suicidal behavior and the concurrent importance of other intentions to suicidal acts.

Simplicity is an advantage of this nomenclature. The set of terms used centers around the least possible number of distinguishing components, that is, outcome, responsibility, and intent. Furthermore, the progression of terms in the nomenclature is logically organized and consistent. This promotes effortless and, therefore, widespread use, which goes a long way toward meeting the aims of understanding and communication. Importantly, this simplicity also contributes to ensuring a culturally normative set of terms, one that is not grounded in a single theoretical perspective. This nomenclature meets the majority of practical needs, and a parsimonious use of terms and definitions may help to promote the interdisciplinary communication that is so crucial to suicidology.

As said in the introductory section, the staff of emergency wards will probably continue to be more interested in the physical consequences of a suicidal behavior than in the ascertainment of the intention to die possibly involved in the act. On the other hand, intention(s) will remain (forever) exposed to deliberate denial or exaggeration. However, promoting the culture of investigating in deeper detail attempted suicide cases constitutes, in our view, a very worthwhile effort. Not only may it improve our understanding of suicidal behavior, but it could also positively affect the entire aftercare process.

Conclusions

The acceptance of a consistent definition and terminology for suicide and suicidal behaviors appears to be the most

applicable and usable solution to the definitional challenges facing suicidologists. Following detailed consideration of these problems, particularly as they manifested in the course of the WHO/EURO Multicenter Study on Suicidal Behavior, we considered elements that are important to a usable definition for suicide. This definition was then expanded to form a more complete nomenclature for suicidal behavior. This clearly implies the abandonment of the support given at the beginning of the WHO study to the term "parasuicide." Its over-inclusive character has generated misleading interpretations and erroneous utilizations in different settings, nationally and internationally. In 1994 we suggested the interchangeability of the terms parasuicide and attempted suicide. Together with "deliberate self-harm" and "deliberate self-poisoning," we are now proposing for them the comprehensive category of "non-fatal suicidal behavior, with or without injuries." A consequent definition could be the following:

"A nonhabitual act with nonfatal outcome that the individual, expecting to, or taking the risk to die or to inflict bodily harm, initiated and carried out with the purpose of bringing about wanted changes."

The acceptance and implementation of these terms and definitions may contribute to a solution of some of the problems that are associated with the assortment of terms and definitions currently used to describe suicide and related behaviors. We hope, too, that the proposed solution may advance the thoughtful and challenging debate that has thus far characterized this important and multidisciplinary field of interest. Beyond the tower of Babel . . . or before?

Acknowledgments

This manuscript is an adaptation from: De Leo, D., Burgis, S., Bertolote, J., Kerkhof, A., & Bille Brahe, U. (2004). Definitions of suicidal behaviour. In De Leo, D., Bille Brahe, U.J., Kerkhof, A., & Schmidtke, A. (Eds.), *Suicidal behavior: Theories and research findings* (pp. 17–39). Göttingen: Hogrefe & Huber.

References

- Allen, F. (2000). Suicide: What is to be done? *Australian Psychologist*, 35, 29–31.
- Alvarez, A. (1972). *The savage god: A study of suicide*. New York: Random House.
- Arffa, S. (1983). Cognition and suicide: A methodological review. *Suicide and Life-Threatening Behavior*, 13, 109–122.
- Baechler, J. (1980). A strategic theory. *Suicide and Life-Threatening Behavior*, 10, 70–99.
- Barber, M.E., Marzuk, P.M., Leon, A.C., & Portera, L. (1998). Aborted suicide attempts: A new classification of suicidal behavior. *American Journal of Psychiatry*, 155, 385–389.
- Barracough, B., Holding, T., & Fayers, P. (1976). Influence of coroners' officers and pathologists on suicide verdicts. *British Journal of Psychiatry*, 128, 471–474.
- Beck, A.T., Herman, I., & Schuyler, D. (1974). Development of suicidal intent scales. In A.T. Beck, H.L.P. Resnik, & D. Lettieri (Eds.), *Measurement of suicidal behaviors*. New York: Charles Press.
- Bille-Brahe, U., Schmidtke, A., Kerkhof, A.J.F.M., De Leo, D., Lonnqvist, J., & Platt, S. (1994). Background and introduction to the study. In A.J.F.M. Kerkhof, A. Schmidtke, U. Bille-Brahe, D. De Leo, & J. Lonnqvist (Eds.), *Attempted suicide in Europe. Findings from the Multicentre Study on Parasuicide by the WHO regional office for Europe* (pp. 3–15). Leiden: DSWO Press.
- Bille-Brahe, U., Schmidtke, A., Kerkhof, A.J.F.M., De Leo, D., Lonnqvist, J., Platt, S., & Sampaio Faria, J. (1995). Background and introduction to the WHO/EURO Multicentre Study on Parasuicide. *Crisis*, 16, 72–84.
- Canetto, S.S., Lester, D. (1995). Gender and the primary prevention of suicide mortality. *Suicide and Life-Threatening Behavior*, 25, 58–69.
- Dear, G. (2001). Further comments on the nomenclature for suicide-related thoughts and behavior. *Suicide and Life-Threatening Behavior*, 31, 234–235.
- De Leo, D., Bertolote, J.M., Schmidtke, A., Bille-Brahe, U., & Kerkhof, A.J.F.M. (1999). Definitions in suicidology: The evidence-based and the public health approach. 20th World Congress of the International Association for Suicide Prevention, Athens, *Proceedings book*, pp. 194.
- De Leo, D., Bertolote, J.M., & Lester, D. (2002). Self-directed violence. In E.G., Krug, L.L. Dahlberg, J.A. Mercy, A.B. Zwi, & R. Lozano (Eds.), *World report on violence and health* (pp. 183–212). Geneva: World Health Organization.
- Devries, A.G. (1968). Definition of suicidal behaviors. *Psychological Reports*, 22, 1093–1098.
- Durkheim, E. (1951). *Suicide: A study in sociology* (J.A. Spaulding & G. Simpson, Trans.). Glencoe/London: The Free Press. (Original work published 1897).
- Egel, L. (1999). On the need for a new term for suicide. *Suicide and Life-Threatening Behavior*, 29, 393–394.
- Farberow, N.L., MacKinnon, D.R., & Nelson, F.L. (1977). Suicide: Who's counting? *Public Health Reports*, 92, 223–232.
- Ivanoff, A. (1989). Identifying psychological correlates of suicidal behavior in jail and detention facilities. *Psychiatric Quarterly*, 60, 73–84.
- Jobs, D.A., Berman, A.L., & Josselson, A.R. (1987). Improving the validity and reliability of medical-legal certifications of suicide. *Suicide and Life-Threatening Behavior*, 17, 310–325.
- Kaplan, S.J., & Schoeneberg, L.A. (1988). Defining suicide: Importance and implications for Judaism. *Journal of Religion and Health*, 27, 154–156.
- Kerkhof, A.J.F.M., Schmidtke, A., Bille-Brahe, U., De Leo, D., & Lonnqvist, J. (Eds.). (1994). *Attempted suicide in Europe. Findings from the Multicentre Study on Parasuicide by the WHO regional office for Europe*. Leiden: DSWO Press.
- Kreitman, N. (1977). *Parasuicide*. London: Wiley.
- Kreitman, N., Philip, A.E., Greer, S., & Bagley, C.R. (1969). Parasuicide. *British Journal of Psychiatry*, 115, 746–747.
- Lester, D. (1992). Miscounting suicides. *Acta Psychiatrica Scandinavica*, 85, 15–16.
- Lester, D. (1994). Suicide. In V.S. Ramachandran (Ed.), *Encyclopedia of human behavior* (Vol. 4). San Diego: Academic Press.

- Linehan, M.M. (1997). Behavioral treatments of suicidal behaviors: Definitional obfuscation and treatment outcomes. In D.M. Stoff & Mann, J.J. (Eds.), *The neurobiology of suicide: From the bench to the clinic. Annals of the New York Academy of Sciences*, 836, pp. 302–328. New York: New York Academy of Sciences.
- MacDonald, M. (1989). The medicalization of suicide in England: Laymen, physicians, and cultural change, 1500–1870. *The Milbank Quarterly*, 67, 69–91.
- Maris, R., Berman, A., & Silverman, M. (2000). The theoretical component in suicidology. In R. Maris, A. Berman, & M. Silverman (Eds.), *Comprehensive textbook of suicidology*, (pp. 26–61). New York: Guilford.
- Mayo, D.J. (1992). What is being predicted?: The definition of “suicide.” In R. Maris, A. Berman, J. Maltzberger, & R. Yufit (Eds.), *Assessment and prediction of suicide*, (pp. 88–101). New York: Guilford.
- Minois, G. (1999) *History of suicide: Voluntary death in western culture*. Baltimore, MD: Johns Hopkins University Press.
- Mohandie, K., & Meloy, J.R. (2000). Clinical and forensic indicators of “suicide by cop.” *Journal of Forensic Science*, 45, 384–389.
- Muehrer, P. (1995). Suicide and sexual orientation: A critical summary of recent research and directions for future research. *Suicide and Life-Threatening Behavior*, 25, 72–81.
- O’Carroll, P.W. (1989). A consideration of the validity and reliability of suicide mortality data. *Suicide and Life-Threatening Behavior*, 19, 1–16.
- O’Carroll, P.W., Berman, A.L., Maris, R.W., Moscicki, E.K., Tanne, B.L., & Silverman, M.M. (1996). Beyond the tower of Babel: A nomenclature for suicidology. *Suicide and Life-Threatening Behavior*, 26, 237–252.
- Rosenberg, M.L., Davidson, L.E., Smith, J.C., Berman, A.L., Buzbee, H., Gantner, G., Gay, G.A., Moore-Lewis, B., Mills, D.H., Murray, D., O’Carroll, P.W., & Jobes, D. (1988). Operational criteria for the determination of suicide. *Journal of Forensic Sciences*, 33, 1445–1456.
- Rudd, M.D. (1997). What’s in a name? *Suicide and Life-Threatening Behavior*, 27, 326–327.
- Sainsbury, P., & Barraclough, B.M. (1968). Differences between suicide rates. *Nature*, 220, 1252.
- Sainsbury, P., & Jenkins, J.S. (1982). The accuracy of officially reported suicide statistics for purposes of epidemiological research. *Journal of Epidemiology and Community Health*, 36, 43–48.
- Santa Mina, E.E., & Gallop, R.M. (1998). Childhood sexual and physical abuse and adult self-harm and suicidal behavior: A literature review. *Canadian Journal of Psychiatry*, 43, 793–800.
- Shneidman, E.S. (1981). Suicide. *Suicide and Life-Threatening Behavior*, 11, 198–220.
- Shneidman, E.S. (1984). Suicide. In R. Corsini (Ed.), *Encyclopedia of psychology* (Vol. 3, pp. 383–386). New York: Wiley.
- Shneidman, E.S. (1985). *Definition of Suicide*. New Jersey: Jason Aronson Incorporated.
- Silverman, M.M., & Maris, R.W. (1995). The prevention of suicidal behaviors: An overview. *Suicide and Life-Threatening Behavior*, 25, 10–21.
- Smith, K., & Maris, R. (1995). Suggested recommendations for the study of suicide and other life-threatening behaviors. *Suicide and Life-Threatening Behavior*, 25, 533–534.
- Stack, S. (1996). The effect of the media on suicide: Evidence from Japan, 1955–1985. *Suicide and Life-Threatening Behavior*, 26, 132–142.
- Stengel, E. (1964). *Suicide and attempted suicide*. Baltimore: Penguin Books.
- Suyemoto, K.L. (1998). The functions of self-mutilation. *Clinical Psychology Review*, 18, 531–554.
- World Health Organization. (1974). Suicide and attempted suicide. In E. Brooke (Ed.), *Public Health Paper No. 58*. Geneva: World Health Organization.
- World Health Organization. (1986). *Summary report, working group in preventative practices in suicide and attempted suicide*. Copenhagen: WHO Regional Office for Europe.
- World Health Organization. (1998). *Primary prevention of mental, neurological and psychosocial disorders. Suicide*. Geneva: WHO.

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