The Duration of the Suicidal Process: How Much Time Is Left for Intervention Between Consideration and Accomplishment of a Suicide Attempt?

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Objective: A history of suicide attempts is a major predictive factor for completed suicide with repeated self-harm constituting a particularly high risk. This study was undertaken to investigate suicide attempters' reports on the length of the period between consideration and accomplishment of a suicide attempt.

Method: Eighty-two patients referred to a psychiatric university hospital after a suicide attempt were approached within 3 days after the act. A semistructured interview focusing on the duration and related aspects of the suicidal process, the Barratt Impulsiveness Scale, the Beck Suicide Intent Scale, and the Montgomery-Asberg Depression Rating Scale were administered. Data were collected from July 2004 to December 2005.

Results: Nearly half of the patients (47.6%; N = 39) reported that the period between the first current thought of suicide and the actual attempt had lasted 10 minutes or less. Those patients in which this process had taken longer showed a higher suicidal intent ($p < .001$). Impulsivity was not associated with the duration of the suicidal process. Although the majority of the patients were alone during the suicidal process, 76.8% (N = 63) reported having had any kind of interpersonal contact.

Conclusion: The process from the emergence of suicidal thoughts to the accomplishment of a suicide attempt, and thus the time for intervention, generally is short. However, in a considerable number of suicide attempters, there is at least some readiness for interpersonal contact with partner, family, or friends. Professional helpers appear to have limited potential for intervention during this phase. Thus, spreading information on signs of suicidality and interventional measures among the general population should be incorporated into suicide prevention strategies.

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A history of suicide attempts is one of the most important risk factors for completed suicide.[1–3] It is estimated that suicide attempts outnumber completed suicides 10 to 25 times.[4] Two percent of suicide attempters die from suicide within 1 year after the attempt[5] with the highest risk within the first 6 months after an attempt.[6] Up to two thirds of suicide victims have a history of a prior suicide attempt.[7] Repeated self-harm behavior appears to constitute a particularly high risk.[8]

A large number of risk factors for attempted suicide have been identified including female gender, younger age, being previously married, psychiatric morbidity, substance abuse, impulsivity, smoking, a family history of psychiatric disorders or suicidal behavior, and others.[9–15]

Strategies for suicide prevention may be basically classified into 2 approaches, namely, population-based strategies and strategies related to high-risk individuals.[16–18] Population-based strategies include measures such as general restriction of access to means of suicide, training of primary health care personnel, and implementing crisis intervention facilities,[19] and thus predominantly constitute the task of professional helpers. The focus of the second approach is to provide help and treatment for the individual subject/patient currently experiencing a suicidal crisis. On this level, besides physicians, teachers, or clergymen, nonprofessional helpers, including family and friends, may be involved in suicide prevention.

The suicidal process, defined as the time span between the first current thought of suicide and the accomplishment of the suicidal act, has been described as a period consisting of 3 phases.[20] The first stage is a phase of "consideration." Suicide is seen as a potential solution for subjectively perceived problems. If the process continues, the next stage is characterized by "ambivalence" between or "confrontation" of self-destructive and self-preserving forces. Finally, the phase of "decision making" leads to the actual accomplishment of the suicidal act.[20]

Since the length of the suicidal process, and thus the time available for intervention, has a major impact on the success of suicide prevention strategies, it is essential to know more about the nature of this process, its duration, and its specific circumstances. This study assessed

the duration of the suicidal process as reported by patients who survived a suicide attempt and examined the demographic and clinical factors correlated with the duration.

METHOD

Subjects

Data were collected on consecutive patients referred to the Department of Psychiatry, Innsbruck Medical University, Innsbruck, Austria, after a suicide attempt. The study period covered 18 months from July 2004 to December 2005. Eligible patients were contacted after admission and asked to participate in the study. Written informed consent was obtained from those who agreed. Interviews took place within a maximum of 3 days after the attempt in order to keep the recall bias as low as possible. The study procedure was approved by the Ethics Committee of the Innsbruck Medical University.

Assessments

Assessment tools included a list of demographic and clinical variables, the Barratt Impulsiveness Scale (BIS)[21,22] as a trait measure for impulsivity, the Beck Suicide Intent Scale,[23] and a semistructured interview focusing on the duration of the suicidal process, its circumstances, and accompanying thoughts, including the wish to contact someone, as well as patient-reported ideas on what might have deterred him/her from committing the suicide attempt. All of the assessment tools were applied within one contact. Patients were instructed to refer to the suicidal process as the period between the emergence of the first current and persisting suicidal thoughts and the suicide attempt and to refer to the decision-making period as the period between the decision and the accomplishment of the attempt. Most patients were able to distinguish between these periods. Current suicidality (at the time of the interview) was assessed using Montgomery-Asberg Depression Rating Scale (MADRS)[24] item #10. For the classification of suicide methods, patients' reports as well as information from treating physicians were used. All interviews were conducted by the same rater (C.M.I.), who was trained for all scales used.

Statistical Analysis

The primary objective of the statistical analysis was an investigation of factors potentially affecting the duration of the suicidal process. As this duration could easily be dichotomized in a clinically meaningful way (rapid development of the process within a time span of at most 10 minutes vs. a less rapid development), logistic regression was used as the main analysis tool. Simple logistic regression was applied to investigate the independent variables separately; multiple logistic regression with forward variable selection was used to study the combined effect of the independent variables on the duration of the suicidal process. Odds ratios were calculated to quantify the association of the independent variables.

In addition, Spearman rank correlation coefficients were calculated to analyze associations between several continuous or ordinal variables, owing to the nonnormal distribution of the variables involved. The Mann-Whitney U test was used to compare subgroups of patients with respect to the scales described above (BIS and Beck Suicide Intent Scale).

RESULTS

A total of 105 eligible patients were screened for study participation. Twelve suicide attempters refused to participate, 7 were not able to communicate in German sufficiently or were—due to the inclusion limit of 3 days after the attempt—still impaired by consequences of the suicide attempt (e.g., sedation after drug ingestion), and 4 were discharged from the hospital before they could be approached by the study rater. Thus, 82 patients eventually participated in the study. Seventeen patients were contacted within 1 day and 65 interviews took place between 2 and 3 days after the attempt. Excluded subjects did not differ significantly from participants in terms of age, gender, or violence of suicide method.

Demographic and clinical data of the study participants are presented in Table 1. In 28 subjects (34.1%), the present suicide attempt was the first attempt; 54 patients (65.9%) were repeaters. The mean number of suicide attempts was 3.4 (range, 1–30; SD = 4.6). With regard to suicide methods applied for the index attempt, 27 patients (32.9%) used a violent method (cutting, 18 [22.0%]; hanging, 4 [4.9%]; other, 5 [6.1%]) and 55 (67.1%) used a nonviolent method (drug ingestion, 52 [63.4%]; gas, 3 [3.7%]).

Figure 1 displays the percentages of patients reporting how much time had elapsed between the first current thought of suicide and the attempt. Thirty-nine attempters (47.6%) reported a time span of 10 minutes or less for the suicidal process. There was a second, less pronounced peak of patients who reported more chronic suicidal ideation (at least 1 day). Most of the patients were able to discriminate between the occurrence of suicidal ideation and the actual decision to commit the suicide attempt. Sixty-one (74.4%) said that the decision-making period (i.e., the period between decision and attempt) was very short (i.e., 10 minutes or less; Figure 2).

Sixty-eight patients (82.9%) reported being alone when the idea to commit suicide emerged for the first time within the suicidal process (others were together with the partner or friends), and nearly the same portion (86.6%; N = 71) were alone when they made the eventual decision to do so. When asked what they had thought about during the suicidal process (i.e., the period between first suicidal thought and attempt), the most frequent answers referred

Table 1. Demographic and Clinical Variables of Suicide Attempters (N = 82)

Men/women, N (%)	35 (42.7)/47 (57.3)
Mean age (range; SD), y	38.5 (18–74; 12.1)
Relationship status, N (%)	
Single	37 (45.1)
Married/living with partner	23 (28.0)
Divorced	20 (24.4)
Widowed	2 (2.4)
Smokers, N (%)	61 (74.4)
Main diagnostic categories (ICD-10), N (%)[a]	
F1	16 (19.5)
F2	8 (9.8)
F3	28 (34.1)
F4	15 (18.3)
F5	3 (3.7)
F6	12 (14.6)
Prior psychiatric hospitalizations, N (%)	
None	24 (29.3)
1–3	28 (34.1)
4–10	15 (18.3)
> 10	15 (18.3)
Family history, N (%)	
Psychiatric disorders	38 (46.3)
Suicide	14 (17.1)
Suicide attempts	26 (31.7)
MADRS item #10 score, mean (range; SD)	2 (0–5; 1.3)
Barratt Impulsiveness Scale total score, mean (range; SD)	65.4 (48–93; 10.4)
Beck Suicide Intent Scale total score, mean (range; SD)	14.2 (5–25; 4.8)
Beck Suicide Intent Scale "circumstances" subscore, mean (range; SD)	7.3 (3–14; 2.4)
Beck Suicide Intent Scale "self report" subscore, mean (range; SD)	6.9 (0–12; 3.1)

[a]ICD-10 codes: F1 = Mental and behavioral disorders due to psychoactive substance use; F2 = Schizophrenia, schizotypal and delusional disorders; F3 = Mood disorders; F4 = Neurotic, stress-related, and somatoform disorders; F5 = Behavioral syndromes associated with physiological disturbances and physical factors; F6 = Disorders of adult personality and behavior.
Abbreviations: ICD-10 = *International Classification of Diseases, 10th Revision*; MADRS = Montgomery-Asberg Depression Rating Scale.

to "reflecting on one's current and past life" and "thinking of the partner or family." Only 1 patient reported feelings of revenge, and only 1 reported problem-solving thoughts.

Nearly all patients (97.6%; N = 80) stated retrospectively that they had had the possibility of contacting somebody between the first current suicidal thought and the attempt, and 63 (76.8%) actually reported any kind of interpersonal contact, in most cases via telephone, predominantly with the partner, family, or friends. Sixteen (25.4% of those with any contact) gave notice of their wish to die, and 25 (39.7%) gave—as they felt subjectively—at least some kind of hint. When asked what might have deterred them from the suicide attempt, the answers generally remained vague. Typical statements included "If my life had taken a different course…," "If we wouldn't have argued…," or "If I wouldn't have been depressed/anxious/drunk…"

Figure 3 shows BIS and Beck Suicide Intent Scale mean scores of patients in which the suicidal process

Figure 1. Time Between First Occurrence of a Thought of Suicide and Suicide Attempt

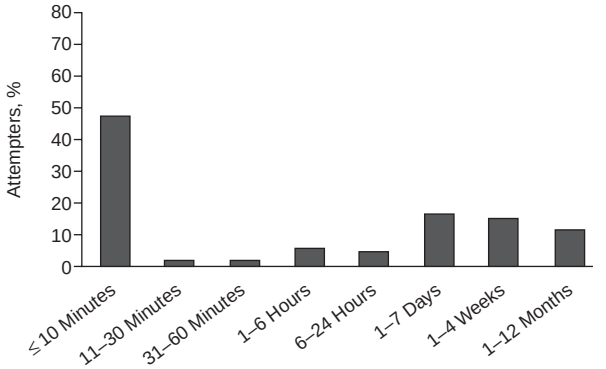

Figure 2. Time Between Decision to Commit Suicidal Act and Attempt

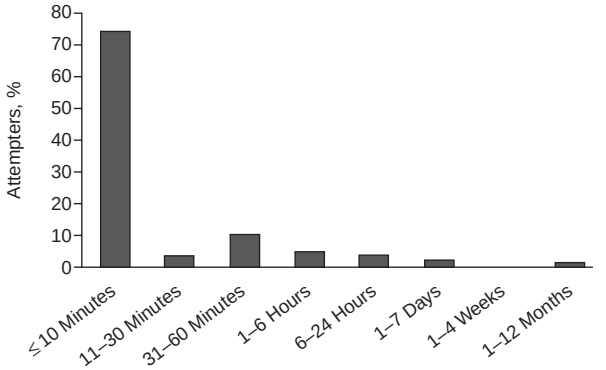

Figure 3. Impulsiveness and Suicide Intent Scores Related to Length of Suicidal Process

Abbreviations: BIS = Barratt Impulsiveness Scale, SIS = Beck Suicide Intent Scale.

Table 2. Association of Length of Suicidal Process With Patient Characteristics and Impulsivity: Results of Logistic Regression Analysis

	Length of Suicidal Process (subgroup)		Statistics[a]		
Independent Variable	≤ 10 min (N = 39)	> 10 min (N = 43)	Odds Ratio[b]	95% CI	p Value
Men/women, N (%)	16 (41.0)/23 (59.0)	19 (44.2)/24 (55.8)	0.88	0.37 to 2.11	.773
Age					
Mean ± SD, y	39.8 ± 11.5	37.3 ± 12.6			
Age ≥ 40 y, N (%)	21 (53.8)	17 (39.5)	1.78	0.74 to 4.29	.194
Existing relationship (married/living with partner), N (%)	22 (56.4)	21 (48.8)	1.35	0.57 to 3.15	.493
Smokers, N (%)	28 (71.8)	33 (76.7)	0.77	0.29 to 2.08	.608
Prior suicide attempts, N (%)	27 (69.2)	27 (62.8)	1.33	0.53 to 3.34	.539
Contact with somebody during suicidal process, N (%)	29 (74.4)	34 (79.1)	0.77	0.28 to 2.16	.614
Violent method (current suicide attempt), N (%)	11 (28.2)	16 (37.2)	0.66	0.26 to 1.68	.386
BIS total score					
Mean ± SD	66.2 ± 10.3	63.2 ± 10.9			
Score ≥ 66 (median), N (%)	22 (56.4)	20 (46.5)	1.49	0.62 to 3.56	.371
Beck Suicide Intent Scale					
Total score, mean ± SD	13.1 ± 4.5	17.2 ± 4.3			
Total score ≥ 14 (median), N (%)	12 (30.8)	33 (76.7)	0.13	0.05 to 0.36	< .001
"Circumstances" subscore, mean ± SD	6.9 ± 2.4	8.2 ± 1.9			
"Circumstances" subscore ≥ 7 (median), N (%)	14 (35.9)	27 (62.8)	0.35[c]	0.12 to 1.03[c]	.056[c]
"Self report" subscore, mean ± SD	6.2 ± 2.9	9.0 ± 3.1			
"Self report" subscore ≥ 7 (median), N (%)	9 (23.1)	33 (76.7)	0.12[c]	0.04 to 0.36[c]	< .001[c]

[a]For all independent variables, except Beck Suicide Intent Scale subscores, statistics shown were derived from simple logistic regression analyses. Adjustment for the other independent variables by multiple logistic regression did not affect the statistical significance of any of the results.
[b]For continuous variables, the odds ratio per unit increase in the independent variable is displayed.
[c]Statistics shown were derived from multiple logistic regression analysis with forward variable selection (without including the total Beck Suicide Intent Scale score, to avoid problems with multi-collinearity).
Abbreviation: BIS = Barratt Impulsiveness Scale.

developed rapidly (within 10 minutes) versus those in which this phase lasted longer. Patients who reported a longer time span until the suicide attempt showed a significantly higher suicidal intent, while impulsivity was not associated with the duration of the suicidal process. Similarly, no significant association was found between the length of the suicidal process and age, gender, relationship status, smoking status, suicide attempt history, contact with other people during the suicidal process, or violence of suicide method, as detailed in Table 2.

There was no difference in either BIS or Beck Suicide Intent Scale scores between patients who used a violent method for the suicide attempt and those who applied a nonviolent method. Suicidal intent but not impulsivity was significantly higher in men than in women (mean ± SD Beck Suicide Intent Scale total score of 15.5 ± 4.7 vs. 13.2 ± 4.7, respectively; Mann-Whitney U test, $z = 2.02$, $p = .044$) and was positively correlated with current MADRS item #10 scores (Spearman rank correlation, $\rho = 0.23$, $p = .042$). Age was not associated with either impulsivity or suicidal intent. Among the entire sample, BIS and Beck Suicide Intent Scale scores did not correlate with each other.

DISCUSSION

This study investigated the duration of the period between the first current emergence of suicidal thoughts and a suicide attempt as reported by patients shortly after the attempt. Nearly half of the attempters reported that the suicidal process had taken no longer than 10 minutes. Those in which this phase had lasted longer showed a higher suicidal intent, whereas impulsivity was not associated with length of the suicidal process. The vast majority of suicide attempters were alone during the suicidal process; however, a considerable portion did not seclude themselves completely but sought or showed at least some readiness for interpersonal contact.

This study specifically targeted the duration of and related issues in the period immediately preceding a suicide attempt. Although acute suicide risk is generally considered to be brief,[25] reliable data on length of the suicidal process are sparse. Williams and Pollock[26] reported 50% of suicide attempters saying later that they had not thought of suicide for more than 1 hour beforehand. In a sample of young female Chinese suicide attempters, Pearson et al.[27] found 40% having considered self-harm for 10 minutes or less before the attempt, and as many as 11% acted within 1 minute. It must be noted that the definition of the suicidal process applied here was that of the period starting with the first *current* suicidal thought and with a suicide attempt as end point. In another context, the term *suicidal process* has been used for the time between the first suicidal ideation *in lifetime* and a suicidal act,[28,29] and in some studies, duration of suicidal ideation was assessed in individuals who had previously attempted suicide,[30,31] making comparison with our duration data unreliable.

We found a higher suicidal intent in men, in patients with a higher suicidality score at the time of the interview,

and in those in which the suicidal process had lasted longer (i.e., more than 10 minutes). The latter result may imply a higher risk for suicide completion in ideators who ponder suicide more intensively. However, neither suicidal intent nor impulsivity was associated with the choice of method for the suicide attempt. Moreover, impulsivity was not associated with the length of the suicidal process. Increased impulsivity has been reported to be a risk factor for suicidal behavior,[32–34] although study findings are not consistent.[35–37] Moreover, it has been suggested that impulsivity may be inversely related to lethality of a suicide attempt.[38,39] In our study, there was no association between impulsivity and suicidal intent.

The vast majority of suicide attempters in this study were alone when the idea to commit suicide emerged, during the subsequent period before their attempts, and when they carried out the plan to harm themselves. This finding, in combination with the short spell the suicidal process lasts in most cases, refers to the importance of proximity for people suffering psychic pain[40] and subsequently developing suicidal ideation. Having the possibility of communicating with a familiar and trustworthy person may help someone pondering suicide to overcome this period by being distracted from suicidal thoughts. Moreover, more than three quarters of the suicide attempters had any form of contact with a potentially helpful person, and a considerable portion of them tried to give notice of their suicidal intent. There may have been many cases in which this communication resulted in a timely enough intervention that prevented a suicide attempt. These cases thus were not the object of this study. To improve the knowledge of the general population regarding potential suicidal signs and to enable as many people as possible to understand the psychosocial needs of a partner, relative, or friend in such a situation is an important tool within the range of suicide prevention measures.

The findings of this study are limited by several issues. First, the results rely on the patients' subjective reports. Although interviews took place within 3 days after the attempt, there might have been some kind of recall bias. Even more important may be a (conscious or unconscious) tendency to try to alter the circumstances of a suicide attempt when reporting on it retrospectively. The subjective perception of an "unsuccessful," since survived, suicide attempt may cause the desire to either dissimulate or exaggerate what one has done. However, it is questionable whether including reports of relatives would have increased the reliability of the data. Moreover, it was the aim of this study to obtain the subjective view of the victims. Second, the number of patients included in the study was relatively low and may not entirely reflect the general suicide attempter population. Finally, we do not know whether circumstances during the suicidal process resulting in a suicide attempt reflect those of the process resulting in completed suicide.

In this study on the duration of the suicidal process (i.e., the phase between the emergence of current suicidal ideation and a suicide attempt), most patients reported a very short period during which potential helpers might intervene and deter them from proceeding to an attempt. Health care or other professionals rarely had contact with a person at risk during this period. Thus, awareness of potentially present suicidality in a relative or friend and the readiness to at least consider the possibility of a suicidal crisis in a significant person is essential for everyone. Suicide prevention strategies should include education of the general population to be generally aware of potential suicidality, to recognize signs of suicidality, and to understand that it is better to ask about suicidal ideation in a potentially troubled person one time too many rather than one time too little.

REFERENCES

1. Isometsä ET, Lönnqvist JK. Suicide attempts preceding completed suicide. Br J Psychiatry 1998;173:531–535
2. Hawton K, Sutton L, Haw C, et al. Suicide and attempted suicide in bipolar disorder: a systematic review of risk factors. J Clin Psychiatry 2005 Jun;66(6):693–704
3. Kuo CJ, Tsai SY, Lo CH, et al. Risk factors for completed suicide in schizophrenia. J Clin Psychiatry 2005 May;66(5):579–585
4. Maris RW. Suicide. Lancet 2002;360:319–326
5. Owens D, Horrocks J, House A. Fatal and nonfatal repetition of self-harm. Br J Psychiatry 2002;181:193–199
6. Cooper J, Kapur N, Webb R, et al. Suicide after deliberate self-harm: a 4-year cohort study. Am J Psychiatry 2005;162:297–303
7. Sakinofsky I. Repetition of suicidal behaviour. In: Hawton K, Van Heeringen K, eds. The International Handbook of Suicide and Attempted Suicide. Chichester, UK: John Wiley & Sons; 2000:385–404
8. Zahl DL, Hawton K. Repetition of deliberate self-harm and subsequent suicide risk: long-term follow-up study of 11583 patients. Br J Psychiatry 2004;185:70–75
9. Kessler RC, Borges G, Walters EE. Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. Arch Gen Psychiatry 1999;56:617–626
10. Corruble E, Damy C, Guelfi JD. Impulsivity: a relevant dimension in depression regarding suicide attempts? J Affect Disord 1999;53:211–215
11. Kerkhof AJFM. Attempted suicide: patterns and trends. In: Hawton K, Van Heeringen K, eds. The International Handbook of Suicide and Attempted Suicide. Chichester, UK: John Wiley & Sons; 2000:49–64
12. Brent DA, Oquendo M, Birmaher B, et al. Peripubertal suicide attempts in offspring of suicide attempters with siblings concordant for suicidal behavior. Am J Psychiatry 2003;160:1486–1493
13. Christoffersen MN, Poulsen HD, Nielsen A. Attempted suicide among young people: risk factors in a prospective register-based study of Danish children born in 1966. Acta Psychiatr Scand 2003;108:350–358
14. Roy A, Janal M. Family history of suicide, female sex, and childhood trauma: separate or interacting risk factors for attempts at suicide? Acta Psychiatr Scand 2005;112:367–371
15. Deisenhammer EA, Lechner-Schoner T, Kemmler G, et al. Serum lipids and risk factors for attempted suicide in patients with alcohol dependence. Alcohol Clin Exp Res 2006;30:460–465
16. Lewis G, Hawton K, Jones P. Strategies for preventing suicide. Br J Psychiatry 1997;171:351–354
17. Althaus D, Hegerl U. Evaluating suicide preventive activities: the present state of research and the resulting implications [in German]. Nervenarzt 2001;72:677–684
18. Mann JJ, Apter A, Bertolote J, et al. Suicide prevention strategies: a systematic review. JAMA 2005;294:2064–2074
19. Bertolote JM. Suicide prevention: at what level does it work? World Psychiatry 2004;3:147–151
20. Pöldinger W, Sonneck G. The assessment of suicidal risk [in German].

Nervenarzt 1980;51:147–151
21. Barratt ES. Factor analysis of some psychometric measures of impulsiveness and anxiety. Psychol Rep 1965;16:547–554
22. Preuss UW, Rujescu D, Giegling I, et al. Factor structure and validity of a German version of the Barratt Impulsiveness Scale. Fortschr Neurol Psychiat 2003;71:527–534
23. Beck AT, Schuyler D, Herman I. Development of Suicidal Intent Scales. In: Beck AT, Resnik HLP, Lettieri DJ, eds. The Prediction of Suicide. Philadelphia, Pa: The Charles Press; 1986:45–56
24. Montgomery SA, Åsberg M. A new depression scale designed to be sensitive to change. Br J Psychiatry 1979;134:382–389
25. Hawton K. Restricting access to methods of suicide. Crisis 2007;28 (suppl 1):4–9
26. Williams JMG, Pollock LR. The psychology of suicidal behaviour. In: Hawton K, Van Heeringen K, eds. The International Handbook of Suicide and Attempted Suicide. Chichester, UK: John Wiley & Sons; 2000: 79–93
27. Pearson V, Phillips MR, He F, et al. Attempted suicide among young rural women in the People's Republic of China: possibilities for prevention. Suicide Life Threat Behav 2002;32:359–369
28. Runeson BS, Beskow J, Waern M. The suicidal process in suicides among young people. Acta Psychiatr Scand 1996;93:35–42
29. Neeleman J, De Graaf R, Vollebergh W. The suicidal process; prospective comparison between early and later stages. J Affect Disord 2004; 82:43–52
30. Joiner TE Jr, Rudd MD, Rouleau MR, et al. Parameters of suicidal crises vary as a function of previous suicide attempts in youth inpatients. J Am Acad Child Adolesc Psychiatry 2000 Jul;39(7):876–880
31. Witte TK, Fitzpatrick KK, Joiner TE, et al. Variability in suicidal ideation: a better predictor of suicide attempts than intensity or duration of ideation? J Affect Disord 2005;88:131–136
32. Brodsky BS, Oquendo M, Ellis SP, et al. The relationship of childhood abuse to impulsivity and suicidal behavior in adults with major depression. Am J Psychiatry 2001;158:1871–1877
33. Koller G, Preuss UW, Bottlender M, et al. Impulsivity and aggression as predictors of suicide attempts in alcoholics. Eur Arch Psychiatry Clin Neurosci 2002 Aug;252(4):155–160
34. Garland MR, Hallahan B, McNamara M, et al. Lipids and essential fatty acids in patients presenting with self-harm. Br J Psychiatry 2007;190: 112–117
35. Müller-Oerlinghausen B, Roggenbach J. Concretism in biological suicide research: are we eating the menu instead of the meal? Pharmacopsychiatry 2002;35:44–49
36. Dumais A, Lesage AD, Alda M, et al. Risk factors for suicide completion in major depression: a case-control study of impulsive and aggressive behaviors in men. Am J Psychiatry 2005;162:2116–2124
37. Swann AC, Dougherty DM, Pazzaglia PJ, et al. Increased impulsivity associated with severity of suicide attempt history in patients with bipolar disorder. Am J Psychiatry 2005;162:1680–1687
38. Baca-García E, Diaz-Sastre C, Basurte E, et al. A prospective study of the paradoxical relationship between impulsivity and lethality of suicide attempts. J Clin Psychiatry 2001 Jul;62(7):560–564
39. Baca-García E, Diaz-Sastre C, García Resa E, et al. Suicide attempts and impulsivity. Eur Arch Psychiatry Clin Neurosci 2005 Apr;255(2): 152–156
40. Shneidman ES. Suicide as psychache. J Nerv Ment Dis 1993;181: 145–147