

The Internet – A New Source of Data on Suicide, Depression and Anxiety: A Preliminary Study

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On the world wide web, self-help newsgroups of suicidal, depressive and anxious people were investigated in a 3-month period. After analyzing the content of the letters (966 letters collected, 222 analyzed) and comparing the suicide ideator group with all other groups, the author tried to find characteristic differences among them and to understand the underlying psychological mechanisms better. The modified version of the Weintraub technique was used in the content analysis. The negatives and dichotomous structures were found to be the strongest differentiating verbal categories among the groups in both sexes, which may reflect the important role of denial and dichotomous thinking among suicidal people. Helpers have to find new ways to approach this Internet-user high risk population.

Keywords internet, newsgroup, worldwide web, suicide, depression, anxiety, discussion group

In the modern changing world, in daily practice, professionals and volunteers have to communicate with suicidal people with respect and in an accommodating manner. Efforts should be made of find new ways of suicide prevention and intervention even at the start of the 21st century, in the modern era of Internet-cyberspace communication (Alao, 1999; Baume, 1997; Huang Alessi, 1996).

On the Internet, self-help newsgroups of suicidal individuals (alt.suicide.holiday), depressives, (alt.support.depression), and anxious people (alt.anxiety.panic) have been established for some years. Each group has its own web sites and is also available on the other domain (Usenet) of the Internet. People who write to these discussion groups are likely to be adolescents or young adults. After the analysis of the

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content of the letters, it was found that the vast majority of the letter-writers in the suicide group were very familiar with the idea of suicide and seemed to be characterized by more-or-less serious suicidal ideation; some of them have attempted suicide before. However, in the majority of these people no obvious psychiatric disorder can be detected. The individuals in the other newsgroups are mostly under treatment because of anxiety or mood disorder. Surprisingly, cross-posting among the newsgroups seldom occurs; only about 3% of the letter are posted to two or three groups at the same time. These newsgroups are “international” and very “crowded” and it is likely that similar age groups communicate with one another. Furthermore, the groups fluctuate in the number of their members, and are characterized by crisis periods and upswings (e.g. around holidays), though the study period was relatively balanced. They can exchange information and might ask for each others’ help or support. A special “subculture” of the groups has developed with traditions, rites, conflicts and a particular group identity. The suicide newsgroup has its own webpage with many documents, poems, suicide note of some members, and suicide method files, as well as hotline numbers. There are additional opportunities for the members to communicate directly with one another, namely the “chat forum” and the e-mail connection. The number of participating observers—lurkers—seems to be high, estimated to be the same number as that of the genuine group members.

The goal of the author was to investigate this new phenomenon; the communication and “verbal behavior” of these Internet users. Analyzing the content of the letters and comparing the “suicide ideator” group to a normal control-group (alt-journalism), as well as to depressive and anxiety newsgroups, the author tried to find characteristic differences among the groups with special regard to their communicative

styles, speech patterns and the contents of their posting.

Suicidal ideation might be an indicator of eventual suicide, which may be prevented to a great extent, even among mentally ill patients, if the clues are recognized at an early stage. Therefore, the research on the characteristics of the group with suicide ideation, and its differentiation from other psychopathological states seems to be very important. Several aspects of suicide ideation have been investigated recently, such as its expression in suicide notes and hotline calls (Leenaars, 1991; Leenaars, Fekete, Wenckstern and Osvath, 1998; Shneidman, 1985; Shneidman & Farberow, 1959), its relation to hopelessness, depressive symptoms, and suicide attempts (Joiner, & Rudd, 1996; Schmid, Manjee, & Shah, 1994), and the difficult problem of its assessment (Rudd, Rajab, 1995). More than 50 years ago Allport highlighted that personal documents such as letters, suicide notes, and diaries have a significant place in psychological research (Allport, 1942).

In the majority of these studies, clinical patients seeking professional help or samples of normal volunteers have been investigated. However, it is a very difficult problem to reach and investigate suicidal people, who do not ask for professional help and do not contact health care facilities.

In an effort to differentiate psychopathological states, such as suicidal preoccupation from depressive or anxiety syndromes, a number of clinical investigations have been carried out to associate speech pattern and verbal style (spoken or written) with these psychopathological states (Gottschalk, 1995; Neuringer, 1988; Osgood & Tzeng, 1990; Weintraub, 1981; 1989). Research has systematically demonstrated what most clinicians assume, namely that individuals sharing significant patterns of nonverbal behavior express these tendencies in their manner of speaking. Through this research, it was possible

to study manifestations of psychological defense or coping mechanisms in speech by isolating categories that can be scored with adequate interjudge reliability. Other researchers using content analytic methods to compare genuine suicide notes with the content of non-suicidal ones (Lester, 1991; O'Donnel, 1993) found particular differences in the grammatical and semantical aspects of normal writings and the suicide notes. The findings of the above investigations do not simply register the varying degrees of pathology, and they are not simply undifferentiated indicators of anxiety or defensiveness, but they may distinguish several psychopathological states by producing stable verbal category profiles though they vary according to different pathological groups (e.g., Weintraub found that frequent use of negators can be an expression of the defense mechanisms of denial; or undoing can be expressed by the frequently used retractors, "taking back" remarks. Verbal habits of compulsive patients often resulted in high retractors and explainers scores, with infrequent use of "expressive" categories. A sample of impulsive speech can reflect its explosive quality, for example by frequent use of the pronoun I, the many expressions of feeling—"I hate," "I love"—the numerous adverbial intensifiers "very," and "really." Osgood found more ambivalent constructions and more frequent polarity syntax in genuine suicide notes than in the false ones).

After the analysis of several data sets from the suicide is investigated, that have been it may be assumed that each of them has both some strength and weakness. Databases of crisis centers and hotlines may include exact information about their individual patients, but in most cases the amount of data is relatively small, and—since data come from a small territory—they cannot be considered representative of the total suicide ideator or attempter population. These databases may have informa-

tion about people who have asked professionals for help. Studies on clinical data sets regarding suicide and depression or research performed on suicide notes may have similar strength and weakness (Black, 1993, Shneidman & Farberow, 1957;).

The present study provides a completely new data set, a new source of information on the Internet, which the author has explored and investigated. Through this survey suicidal people—who have not been available for any research—could be investigated. The results of the author's study might provide help distinguishing the suicidal and the non-suicidal (normal, or depressive and anxious) people from one another and understanding their communication and the underlying psychological mechanisms better. The study suggests that the structure and content of the letters of the suicide newsgroup differ to a certain degree from the "normal" as well as from the depressive and the anxiety letters, and the analysis of these differences can reveal some features which may be useful in the everyday clinical practice and in the preventive work as well. It was hypothesized that the suicidal people would be more likely than the control non-suicidals to use more negative and dichotomous terms, more feelings, more intense emotions in their verbal communication, and would be characterized by high self-preoccupation.

For the analysis, a content analytic method which was developed and validated by Weintraub (1974, 1989) to study the verbal behavior of several groups of psychiatric patients as well as healthy individuals, was applied after some modification. The content analytic method developed by Weintraub has been extensively used in research in the past 20 years. The author also used other categories in the analysis, which have been applied by Neuringer (1988) and Osgood and Tzeng (1990) in their research on documents produced by suicidal people.

METHOD

In the present content analysis, formal, syntactical and grammatical characteristic features, as well as speech patterns and verbal expressions of randomly selected samples from the suicide discussion group, were compared with the samples of the other three groups in an attempt to find interpretable differences and similarities. The other groups matched the suicide group with regard to their sex and nationality. In the study, using the Netscape 4.03 software, every letter in the "alt.suicide.holiday" newsgroup on the world wide web was read, saved and analyzed between 1, Nov. 1995 and 31, Jan. 1996. (n = 966 letters). For a comparison, letters were saved in the same period (they were collected every week) in the alt.support.depression (n = 167), in the alt.anxiety.panic newsgroup (n = 167) and—as a "normal control"—in the alt.journalism (n = 108) discussion group.

Messages in the suicide newsgroup were analyzed thematically first, after which a sample was selected (chosen in each week of the period, from both sexes) for a detailed content analysis. This sample (n = 78) was representative of the entire group regarding the sex and the nationality of the individuals who had written and letters. The sex of the letter writer could be definitely identified in 343 cases (89.7% of the writers), the nationality was identifiable in 875 letters (91%). Similarly, samples were chosen from the other three newsgroups (alt.support depression n = 51; alt.anxiety.panic n = 50; alt journalism n = 43) for the same period. These groups matched the suicide group with regard to their sex, nationality and the one/more letter ratio (2:1).

After the groups were analyzed and compared, the modified Weintraub content analytic method was applied. Letters containing more than 200 words were included

in the study. (Scores based on a small number of words would not accurately reflect the actual usage). The construction of the scoring manual is outlined in detail elsewhere (Weintraub, 1989). Data about its reliability (test-retest; interjudge) and validity can be found in earlier publications (Weintraub & Aronson, 1974; Weintraub, 1981, 1989).

The following is a summary of the categories utilized with their standard scoring procedures:

Personal: I; we; me; personal and nonpersonal references

(A "personal" clause is one in which the grammatical subject refers to a person conceivably known to the speaker. All clauses not scored "personal" are considered "nonpersonal")

Negatives: all negatives such as "no," "never" "nothing," "won't," "nowhere" etc. are scored

Retractors: words, phrases that retract another statement (e.g., "but," "however," "nevertheless," "although," "on the other hand," "except," etc.)

Expressions of feeling: are scored when the speaker describes himself as experiencing an effect (like-dislike, *pleasure-displeasure*, *attraction-aversion*; e.g., "I love, I hate, I fear, you enjoy")

Evaluators: all expressions of value judgement are scored (goodness-badness, right-wrong; e.g., "he is excellent, awful, bad")

Explainers: explaining, justifying, and rationalizing are scored (e.g., "because," "therefore," "since," "in order to"), when a speaker uses a word or a clause which states a causal relationship or gives a reason for an action, attitude or thought

Qualifiers: words or phrases indicating uncertainty, vagueness or weakening statements ("I think, he is wrong," "it may reflect them, I guess," "this house is *kind* of spooky")

Adverbial intensifiers: expressions containing adverbs that increase the force of a statement (“I *really* like it; it is so beautiful,” “this is *exactly* the same”).

Length of words: calculated by a PC program in each group. Persons under high drive may select words in terms of their strongest habits, that is, familiar high frequency words; their vocabulary is less diversified (not a Weintraub category).

Dichotomous expressions: so-called allness terms, frequently used in dichotomous thinking, polarized expressions such as “always,” “never,” “forever” (this is not a Weintraub category).

Two hundred twenty two letters were coded according to these categories. The final scores were calculated by converting raw scores into numbers of scored units per 1,000 words. A computer search program was used to identify the basic expressions, words and conjunctions which were characteristic of these categories. The mean length of words was calculated by dividing the number of characters with the number of words. The following categories were automatically scored by a computer since no knowledge of lexical meaning was required: I, we, and me. The scoring of negatives, dichotomous structures, qualifiers, retractors and explainers was also possible by computer: these measures were dependent upon a relatively small number of commonly used words and phrases in these categories. However, the coding process of the computer was repeated by a personal evaluation performed by the author. Thirty percent of the letters in each group were control-coded by an independent rater (a psychiatrist trained in this method). In all categories where scoring was not automatic, the interrater agreement on scoring ranged from 74 to 90 percent. The descriptive statistics and variance analysis were carried out with SPSS program package.

One way analysis of variance was performed for the 4 groups in each of the categories. Where significant F-ratios had been found, Newman-Keuls and Tukey tests were used to identify the source of the significant differences among the groups.

RESULTS

The basic characteristics of the letters posted in the suicide newsgroup during the 3 month period are demonstrated in Table 1.

A qualitative thematic analysis of the suicide groups' letters shows some interesting results. A previous suicide attempt was mentioned only by 17 individuals and a diagnosis or treatment of depression in 41 individuals; however, an obvious depressive symptomatology was recognized roughly in the same amount of messages. The most frequent topics in the letters were

- (1) asking for and providing support (76 cases, 8%),
- (2) suicide models, pacts and imitation (72 cases, 7.5%),
- (3) asking for suicide methods and information (67 cases, 7%),
- (4) the impact of suicide on the survivors and the other consequences of the act (52 cases, 5.4%),
- (5) the role of religion, the relation with God (47 cases, 5%),
- (6) the relation of suicide, stocktaking and holiday (46 cases, 5%). Such themes as
- (7) hiding suicide as accident (29 cases, 3%),
- (8) philosophical-ethical issues (12 cases, 1.3%), as well as
- (9) direct cry for help phenomenon (11 cases, 1.3%) were also observed.

Many suicide notes and other documents can be found, as well as some information about help-facilities and hotlines. A core of the group (n = 32), people writ-

TABLE 1. Characteristics of Letters in the Newsgroup Nov. 1.95–Jan.31.96

alt.suicide.holiday

Total number of letters = 966
 Number of writers = 382 (definite : female = 103, male = 240)
 more probably : female = 12, male = 27)
 Individuals writing one letter – 234 persons
 Individuals writing than one letter – 148 persons
 2 letters – 55 persons
 3–10 letter – 78 persons (average – 4,5 letters)
 > 10 letters – 15 persons (average –18 letters)
 Rate of the replied letters – 54%
 Nationalities

USA	564	Holland	28	Anon.penet.fi	68
Great Britain	85	French	26	(anonym group)	
Canada	76	Japan	4	Others	30
Australia	49	Israel	4	(Techn.failure)	23

alt.support.depression

Total number of letters = 167
 Number of writers = 45 (definite: female = 13, male = 25, NA = 7)
 Individuals writing one letter – 29 persons
 Individuals writing more than one letter – 16 persons
 Nationalities

USA	124	Austr.	6	Canada	14
Great Britain	18	Other	5		

alt.anxiety.panic

Total number of letters = 167
 Number of writers = 44 (definite: female = 13, male = 27, NA = 4)
 Individuals writing one letter – 23 persons
 Individuals writing more than one letter – 21 persons
 Nationalities

USA	122	Austr.	9	Canada	12
Great Britain	14	Other	10		

alt.journalism

Total number of letters = 108
 Number of writers = 40 (definite: female = 14, male = 24, NA = 2)
 Individuals writing one letter – 19 persons
 Individuals writing more than one letter – 21 persons
 Nationalities

USA	81	Canada	11	Great Britain	16
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ing frequently (>6 letters), are very active and responsive while others enter temporarily into the newsgroup. It seems the basic characteristics of the group include sharing self-help and tolerance—mainly in a supportive manner—as well as acceptance of suicide as a solution to many situations. Also typical are the “overemphasizing” of personal freedom in this context regardless of the circumstances, the rejection of the traditional professional helpers and the

aggression toward “abusers of the group” from the outside. This aggression can also be understood as the protection of the group’s identity toward the “hostile outside world.” Serious crisis situations and psychopathological issues (borderline, narcissistic, histrionic features) can also be frequently observed in the group. About half of the letters were responded to by the other group members; the rate of unanswered letters was much lower in the other

TABLE 2. Statistical Comparison of the Suicide, Depressive, Anxiety and Normal Control Groups

Categories	F-values	D.F.	Significant differences ($p < 0.05$)
Explainers	3.09	3	Depr > Journ
Negatives	9.05	3	Suic > Depr, Anx, Journ
Retractors	3.91	3	Depr > Journ
Dichotoms	9.68	3	Suic > Depr, Anx > Journ
I	25.94	3	Suic, Depr, Anx > Journ
Me	11.11	3	Depr, Anx, Suic > Journ
We	2.38	3	NS
Feelings	14.95	3	Suic, Depr > Anx > Journ
Evaluators	7.71	3	Depr > Suic, Anx, Journ
Qualifiers	1.42	3	NS
Nonpers. references	19.37	3	Suic, Depr, Anx < Journ
Adverbial intensifiers	10.16	3	Suic, Depr > Anx > Journ
Lengword	18.90	3	Suic < Depr, Anx < Journ

discussion groups. The results of a comparison of representative samples from the suicide group ($n = 78$) and the other newsgroups on the basis of our categories, are summarized in Table 2 and Figure 1.

The deviant groups, and in particular the suicide newsgroup, made significantly more use of personal references and "I" The other "emotional" categories, feeling-expressions and adverbial intensifiers were found to occur at a significantly higher rate in the suicidal and depressive group than in both the anxious group and the normal control group.

Three categories distinguished the suicide group from the other groups, including the depressive group. The length of words in the suicidal newsgroup was significantly shorter ($p < 0.05$) among males than in the other groups. The suicide group had a significantly higher dichotomies scores than the other groups ($p < 0.05$). The frequency of the dichotomous structures was found to be significantly higher in the letters of depressive and anxious people (reflecting their pathology) than in the normal control group, but it was significantly lower than in those of the suicide group. Individuals in the suicide discussion group exceeded the normal

controls as well as the depressive and anxious people in the use of negatives to a significant degree ($p < 0.05$) among males and females.

With respect to our content analytic comparison of the newsgroups, some particular differences can be found among the groups. To sum up, the suicide group is characterized by the high scores in emotional categories, low explainers, very frequent negation, high self-preoccupation and a tendency toward polarized, dichotomous thinking.

DISCUSSION

Communication through the Internet appears to be especially important for the labile or mentally ill because they have a chance of finding emotional closeness and detachment simultaneously. People belonging to the suicide newsgroup seem to be very familiar with the idea of self-destruction, they are more rebellious, less dependent and are characterized by greater ambivalence and more-or-less serious suicide ideation. They cannot be reached and helped easily in the traditional

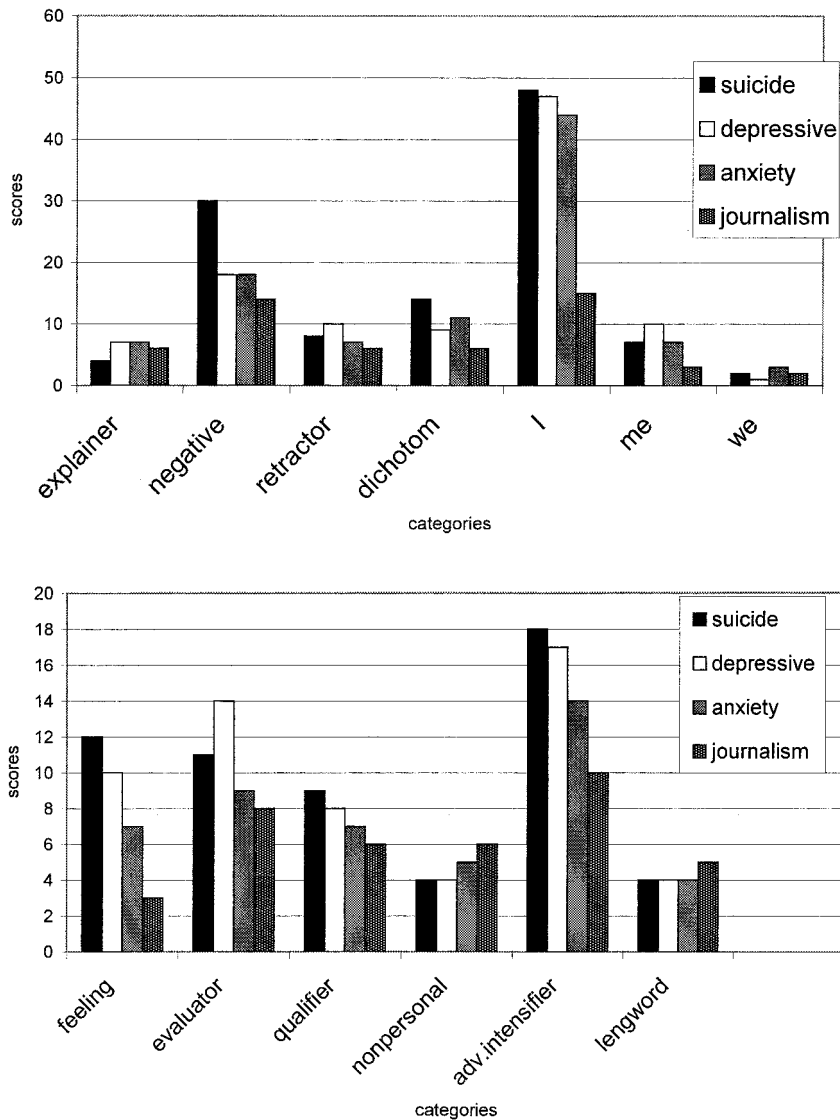


FIGURE 1. Frequency of the verbal categories used in the suicidal, depressive, anxiety and normal control newsgroups.

professional manner. The high proportion of the unanswered letters of the suicide group, compared with other discussion groups might indicate their attachment difficulties. In the great majority of the letters of the depressive and anxiety groups, references can be found to treatment and connection with mental health

care professionals, but the suicide newsgroup appears to be very different; phone numbers and e-mail addresses of The Samaritans and some other services have only recently appeared on the web page of the ASH (alt.suicide.holiday) as have FAQ (frequently asked questions) files posted by helping professionals.

The very frequent use of “I” and other personal references in the deviant groups appears to be symptomatic of a high self-preoccupation, of being unable to take distance, even temporarily, from their personal, frequently morbid concerns. The high frequency of the personal “me” in the pathological groups (highest among the depressives) reflects some passivity as well. The very frequent use of adverbial intensifiers might indicate a tendency to see the world in black and white—dichotomous—terms. The relatively high frequency of retractors and explainers in the depressive group may refer to the fact that mainly the ambivalent-indecisive, partly impulsive self-preoccupied depressive persons post to this newsgroup. According to Weintraub (1989), the high score of evaluators among depressives might be in connection with the activity of a rigid and punitive superego. The length of words in the suicide group, which is significantly shorter than in the other groups, may reflect the greater stereotype in a very stressful state, as the writer tends to use shorter, simpler words and his vocabulary is less diversified (Osgood & Tzeng, 1990). He/she also uses more polarized, “allness” terms—dichotomous structures—which might reflect the polarized, dichotomous thinking and the cognitive rigidity (Neuringer, 1988) as well as the underlying psychological defense mechanism of splitting. The high frequency of negatives may indicate oppositional tendencies as well as the psychological mechanisms of denial and negation. In summary, our data suggest that the strongest differentiating issue, the high frequency of negatives and dichotomies in the suicide letters, significantly distinguishes the suicide group in both sexes from the anxiety, depressive and the normal control groups. They may reflect the underlying psychopathology

of suicidal process—the frequently used archaic defense mechanisms of splitting and denial, the cognitive rigidity and dichotomous, partly stereotyped thinking (Neuringer, 1988; Shneidman, 1985; Osgood & Tzeng, 1990).

The author’s results may improve the understanding of the characteristic psychopathology appearing in both the verbal and written communication of these individuals characterized by suicidal ideation. They may also have practical significance in daily diagnostic work so that suicidality can be assessed better and suicidal people can be distinguished from non-suicidal depressives or anxious persons as well as from the normal population, especially in the overcrowded primary care and psychiatric services or hotlines. For example, the use of negatives and dichotomous structures seems to be useful as a simple test in this differential diagnostic work to separate the threatening but hidden or denied suicidality, or to differentiate the crisis callers from the non-crisis persons in overburdened hotline work.

Considering frequent themes in the suicide newsgroup, the high rate of particular topics such as “asking for suicide methods and information,” the “imitation and model following” and the “cry for help” phenomenon might give a good chance for prevention—directly—on the Internet. The e-mails, phone numbers and FAQ files of the mental health services, especially the Samaritans appearing on the Web, can be the first steps to help. The findings of the author’s study are limited in some respects—one of the problems can be the representativeness and the other, the partial information about sex and age. The sex of the letter writers can be definitely identified in about 90% of the letters (though in the other 10% many indirect references to the sex can be found and these were categorized as probable male or female). Only about 15% of the letters contained references to the writer’s exact age, which was

from 14 to 40 years. However, in the vast majority of the messages, the writers often referred to their young age, indirectly. Writing and communicating in these Internet discussion groups can be considered a more or less generational phenomenon, concerning mainly young people, particularly males. So using additional information and comparing these Internet groups with one another may help to avoid most of the above mentioned problems. The strength of the recent study comprises a huge amount of data collected within a short period and suicidal people from many cultures, most of whom did not ask for professional help.

The appearance of these newsgroups on the Internet has great significance per se from the preventive and interventive viewpoint as well. This is a great challenge for helpers, who have to find new ways to approach the “high risk Internet-user” population (Scott, 1995, quoted by

P. Truman, a suicide newsgroup writer). Internet newsgroups advocating suicide can discourage individuals from seeking psychiatric help. Professional helpers need to know about Internet resources on suicide and to understand how suicide fatalities influence the behaviors of vulnerable people who express suicidal ideation in cyberspace (Dobson, 1999). The investigation of this new data set may provide a much broader perspective in understanding suicidal process. The greatest advantage is that it can make it possible to interact with these individuals on the Net in an indirect way, which is not threatening, and to reach people who do not contact the health care system in the traditional way. The author would like to draw the mental health professionals’ attention to this new phenomenon, and suggests that his finding presented in the above study might be beneficial in mental health care.

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