

Suicide and cognitive distortions

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Abstract: The process of preventing suicidal acts has been studied thoroughly. There are few studies concerning cognitive mechanisms preceding suicidal actions. Suicidal behaviour consists of complexity of biological, psychological, and social factors. The transition of these factors to suicide attempt appears to be determined by cognitive processes. In this article the authors give a short review of relevant literature. To answer the question whether there are specific suicidal cognitive distortions, the authors compared a group of suicidal patients with a matched control group. In the last section of the paper they analyse their data obtained by comparing the two groups using a set of tests.

Key words: suicide, cognitive distortions, dysfunctional attitudes, coping strategies

Samomor in kognitivna popačenja

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Povzetek: V prispevku je natančno razdelan proces preprečevanja samomorilnih dejanj. Redke so raziskave, ki se ukvarjajo s kognitivnimi mehanizmi, ki predhodijo samomorilnemu dejanju. Samomorilno vedenje sestoji iz kompleksa bioloških, psiholoških in družbenih faktorjev. Zdi se, da prenos teh dejavnikov v samomorilni poizkus poteka pod taktirko kognitivnih procesov. Avtorja k temu najprej podajata kratek pregled relevantne literature. Nato v odgovoru na vprašanje, ali imamo opraviti s specifičnimi samomorilnimi kognitivnimi odkloni, primerjata skupino suicidalnih pacientov s primerljivo kontrolno skupino. V zadnjem delu prispevka je predstavljena analiza podatkov, do katerih sta avtorja prišla s primerjanjem dveh skupin respondentov z uporabo niza psiholoških testov.

Ključne besede: samomor, kognitivna popačenja, disfunkcionalno vedenje, strategije spoprijemanja

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As international statistical data reveal, the number of suicide attempts has been increasing recently all over the world - even at places, where the number of suicidal deaths has not increased. This explains the recently intensified interest in the topic. For a long time, Hungary was among the leading countries in the world regarding the number of suicides (Lester, 1993; Rihmer, Barsi & Sandor, 1993; Rihmer, Belső & Barsi, 1994, Zonda, 1991). A wide range of studies have approached the problem of suicide: the sociological, economic, biochemical, etc. as well as the psychopathological aspects of the question have been dealt with in the literature. Ringel (1972) has described the specific pathological state of mind, which leads to a suicide attempt. According to his view, all suicide attempts are preceded by the same unique psychological state. The criteria of presuicidal syndrome as described by Ringel are the following:

- Increasing dynamic self-centeredness,
- Inhibited aggression, or aggression turned towards the self,
- Escape into a world of fantasy. (The individual represents his or her problems visually, pictures his or her own death, the family's reaction, and their behaviour upon learning about his or her death. This fantasy activity increases the self-focused mindset of the individual, further detaching and distancing the person from the outside reality).

According to Ringel, the presence of the above three factors is a warning sign, predicting suicide attempt with a great probability. Often, however, the presence of the factors cannot be determined conclusively, and the temporal course of the presuicidal syndrome might be very different in various individual cases.

Regarding its prevention, to recognize that an individual is communicating his/her suicide intention is crucial. Most recent data and clinical observations suggest that in 90 % of the cases individuals who commit or attempt suicide communicate their intention previously. Unfortunately, these signals are most often ignored, or overlooked by the social environment. Even if the thought of danger occurs, people usually tend to play it down. What further complicates the situation is the fact that suicidal intentions are often not communicated explicitly (see the criteria for suicide syndrome), but rather by non-verbal means, which is even easier to overlook. The relationship of suicide to various psychiatric illnesses is also unclear. Most patients suffering from psychiatric illnesses do not commit or attempt suicide, at the same time, a large proportion of suicides are related to psychiatric illnesses.

Among the various studies that analyse the cognitive processes underlying suicidal behaviour, we want to mention the work of Rotheram and his colleagues (Rotheram, Piacentini, Miller, Graae & Castro, 1994), as well as that of Lewinsohn and his colleagues (Lewinsohn, Rohde & Seeley, 1993). Their work points out that those individuals who show suicidal behaviour possess a specific cognitive style, which differs from the problem solving approach of non-suicide controls. The suicide group

differs from the control in the choice of coping strategies as well (Freeman & Reinecke, 1993; Hawton, Salkovski, Kirk & Clark, 1992; Klingman & Hochdorf, 1993; Kralik & Danforth, 1992). Folkman and Lazarus (1980) have already shown that there are individual differences in the choice of cognitive problem solving methods, which are characterized by a unique personal style, and are in part responsible for the individual's success or failure. Regardless of its diagnostic category, there is some kind of depressive cognitive structure (DCS) in the background of most psychopathological mental states (Tringer 1988, 1991a, 1991b; Tringer & Veér, 1997). The strong connection between an individual's suicidal tendencies and depressive inclinations is well known. 80 % of those who have ever attempted suicide are shown to suffer from middle or severe depression according to the Beck depression scale. At the same time, however, about 40 % of depressed patients do not attempt suicide (Beck, Kovacs & Weissman, 1975). Thus, it appears that suicidal behaviour first of all consists of a unique mental state, which may be considered a suicidal vulnerability in the background of risk factors. This vulnerability depends on various genetic, biochemical, psychological, social, and economic factors.

Recently, important discoveries were made in the empirical study of suicidal behaviour, which shed a new light on one of the criterion of pre-suicidal syndrome suggested by Ringel: the concept of aggression against the self. These studies came up with several contradictory results regarding the role of aggression in suicidal behaviour. Castrogiovanni and his colleagues (Castrogiovanni, Pieraccini & Di-Muo, 1998) have studied 134 depressed ambulatory patients, and found that aggression does not play a major role in the syndrome of suicidal behaviour. In their view, suicidal behaviour is primarily determined by the cognitive syndrome: guilt, paranoid and obsessive thoughts, accompanied by depersonalisation and de-realization. Several other studies showed that the feeling of hopelessness is far more typical in suicidal behaviour than aggression or self-aggression.

A study, conducted by Mann and his co-workers (Mann, Waternaux, Haas & Malone, 1999) seems to contradict this. Their sample consisted of 347 patients in the range of 14 to 72 year olds. About half of the subjects (184 individuals) have attempted suicide seriously. For each patient the following data was recorded: (1) whether the individual have attempted suicide previously, (2) whether aggression and impulsivity as a character trait was typical for the person, (3) the objective and subjective severity of the actual psychopathological state. Their results showed that 184 suicidal persons could not be differentiated from the non-suicidal control group based on the severity of their depressive and psychotic mental states. Thus, it appears that suicidal vulnerability is not determined by the presence of a psychiatric illness. At the same time, the two groups differed in aggression and impulsivity. Those who have attempted suicide previously showed significantly more aggressive and impulsive behaviour, and reported more suicidal fantasies, than the non-suicidal group.

Data from studies examining how helplessness is related to suicide is somewhat less paradoxical. Most studies point out the importance of helplessness in the

determination of mental states preceding and leading to suicide, and its prediction. According to Uncapher and his co-workers (Uncapher, Gallagher Thompson & Osgood, 1998) the best predictor of suicidal behaviour is the feeling of depression and helplessness, at least in elderly patient groups. Mendonca and Holden (1998) examined the interaction of hopelessness, depressiveness and unusual thought processes (disturbed concentration, "empty-head" type symptoms) in suicidal patients. Their data showed the combined scores of hopelessness and unusual thought processes to be the best predictor of suicidal behaviour. Negron, Piacentini, Grae, Davies and Shaffer (1997) compared groups of 12-17 year-olds. In one of the groups, members merely experienced suicidal fantasies, whereas in the other one, suicide attempts in fact have occurred. Results showed that members of the two groups might be separated along the variables of hopelessness, isolation, and concealing suicidal fantasies. At the same time, the two groups did not show any difference in depressiveness. Hall and Platt (1999) examined 100 patients with severe suicide attempts in order to find out what characteristics might be predictive of suicide. The following factors were found to be predictive of suicide: severe anxiety, panic attacks, depressive mood, major affective disorder, the recent loss of an important interpersonal relationship, recent alcohol or drug abuse, moreover, feelings of hopelessness, helplessness, uselessness, partial or complete insomnia, anhedonia, impulsive behaviour. However, the existence of a specific suicidal plan, or notes on suicidal intentions had no predictive value for suicide.

Fawcett and his co-workers (Fawcett, Scheftner, Fogg, Clark, Young & Hedeker, 1990) based on follow-up studies of more than one thousand patients showed that other than suicidal thoughts and attempts hopelessness was the variable, which had predictive value concerning a subsequent suicide attempt. The crucial role of hopelessness in suicide is supported by Castrogiovanni's findings described above (Castrogiovanni et al., 1998), as well as by our own results (see below). It is also worth to mention Schnyder, Valach, Bichsel and Michel (1999) study, in which they examined the causes and emotions and emotional states that construe the background of suicidal acts. They also examined to what degree patients and care taking staff agreed on the causes of suicide attempt and the patient's emotional states immediately preceding it. The 30 patients examined were asked to fill out a questionnaire right after the acute treatment following their suicide attempt. The questionnaire listed 14 possible reasons for the attempted suicide, plus 8 emotions regarding the person's emotional state right before his/her suicide attempt. The patients had to select the answer they found to be best describing their case. The physician and nurse treating the patient filled out the same questionnaire independently. All three groups (physicians, nurses, and patients) selected most frequently the answer 'intra-personal reasons' as the cause of the suicide. For instance, getting rid of a terrible state of mind, or the unbearable situation. Patients, however, chose significantly more often the loss of control as the cause of their suicide. There were differences between staff members and patients in their judgment of the emotional state preceding the suicidal act.

Patients chose most often anxiety/panic, and emptiness/emotional vacuum, whereas both doctors and nurses chose despair, weakness, and hopelessness. These results are very important from the point of view of treatment, since it appears that hospital staff often assumes different reasons in the background of the suicidal act, and attributes different emotions to patients, than what they really experience. This probably has an effect on the therapeutic treatment as well.

Doron and his co-workers' study (Doron, Stein, Levine, Abramovitch, Eilat & Neumann, 1998) is relevant for us, because their results appear to support our findings (see below). Doron examined three groups of psychiatric patients: (1) Patients who have attempted suicide ($N = 17$), (2) patients who had suicidal thoughts ($N = 20$), (3) patients who have never attempted suicide and had no suicidal fantasies. All three groups were shown a movie, which was a story of two young people committing suicide. Anxiety measures were taken before and after screening for all participants, using psychometric methods (anxiety scale), and physiological measures (heart and breathing rate, blood pressure, EMG). They also measured psychomotor agitation during the movie, while patients were watching. Their results showed that the first group showed lower heart rates after the movie, and less variation in their heart- and breathing-rates, than the other two groups. This group also differed regarding their psychomotor agitation: patients who have attempted suicide before showed a greater level of psychomotor agitation until the suicide was discovered in the story, and they calmed down afterwards. In contrast, the other two groups showed increasing agitation from the beginning to the end of the film. These findings suggest that suicidal patients experienced less anxiety than the other two non-suicidal groups.

Loas and his co-workers used pair-wise comparisons (Loas, Perot, Chignague, Trespalacios & Delahousse, 2000) to compare depressed, suicidal patients, and healthy controls regarding the presence of anhedonia, which is a possible characteristic of the pre-suicidal psychological state. Statistical analysis showed anhedonia to be the consequence of depression, and not a risk factor for suicidal behaviour. The findings of Nordström, Challing and Asberg (1995), however, contradict these results. They also used pair-wise comparisons examining suicidal patients and their non-suicide twins regarding anhedonia. MacLoad and his colleagues' study (MacLoad, Pankhania, Lee & Mitchell, 1997) came up with an interesting result showing that patients who attempted suicide anticipated significantly fewer positive events than normal controls, regarding the anticipation of negative events, however, there was no difference between the two groups. This difference was shown to be a primary characteristic, resulting from the incapacity of suicidal individuals to decode the positive content of happy events.

Clinical experience shows that in the background of suicidal behaviour there is often a cognitive schema related to loss, loneliness, personal inadequacy, and feeling unworthy of being loved. These schemas may stay hidden during a whole lifetime, in some cases, but certain life events might activate them. Thus, it seems reasonable to look for predictors of the suicidal drive into suicidal act in the cognitive domain, more

specifically, in thinking, attitudes, future expectations and value-system. Suicide, then, as a problem solving mechanism may be conceptualised as a cognitive schema, with a low threshold of activation.

The goal of our study

Since until now very little work has been done on the empirical study of the cognitive processes in the background of mental states leading to suicidal behaviour, we decided to explore these cognitive distortions, and dysfunctional attitudes. The understanding of these processes is crucial for prevention and a specific therapeutic intervention. The hypotheses serving as the basis for our study were the following:

- individuals who attempted suicide could be characterized by a specific constellation of dysfunctional attitudes;
- coping strategies used by individuals who attempted suicide differ from those of the control group.

The decisive importance of the life period soon before the suicide attempt is a well-known fact. During this period, the individual becomes more and more influenced by the forces, which, at the end result in the act of suicide. According to our hypothesis the individual's cognitive style plays a decisive role in determining the mental state leading to the suicidal act. In other words, what is important is how the individual interprets the ongoing events, and experiences his/her own self in such a situation. This latter point is especially crucial, since the suicidal individual devaluates his own life, and considers himself unworthy of life, and seeing him/herself in a negative light. The negative self-view (Zöld, Tringer & Papp, 1980) is essentially a distorted system of self-related attitudes. According to our hypothesis this attitude-system differs in individuals who committed the suicidal act from those who did not, despite suffering from the same psychopathological syndrome. The difference is expected to lie in the differing constellation of dysfunctional attitudes, which could be shown by a multivariate statistical test. We expect to find differences in the problem-solving strategies applied, more specifically, we expect that problem solving strategies applied by suicidal individuals will be less successful. These problem-solving strategies also belong to the category of cognitive operations. Folkman and Lazarus's (1980) above mentioned approach appears to be suitable for their study.

Suicide and suicide attempt may be considered problem-solving strategy. Clinical observations show that life-problems of suicidal individuals do not differ from the problems those, who do not commit suicide, must face. Suicide is the acting-out solution for problematic situations that seem irresolvable. The question is, what kind of cognitive distortions are in the background of such dysfunctional behaviour. The testing of the hypotheses stated above is aimed at understanding the likelihood of suicidal

behaviour more exactly. If we find typical attitudes, or attitudes systems for suicidal behaviour, then these may be used as predictors of the danger of suicidal behaviour in the future. Using specific coping strategies, or lacking certain ones may also serve as signals of suicidal danger. Thus, by testing our hypotheses, we can work out a specific cognitive-behavioural therapeutic training. In case we find an attitude constellation typical for suicidal behaviour, then their intentional therapeutic influencing may prove to be a decisive factor in preventing further suicide attempts. The same holds for the study of coping strategies, which may be altered, and treated by specific therapeutic methods, for instance, assertivity training (Perczel & Tringer, 1994a, 1994b).

Method

Participants

The participants of our study were suicidal inpatients, and outpatients and their control pairs. The members of the control population were also psychiatric in- and outpatients. The suicidal patients were examined in one-week period after the attempt. The suicidal and the control group differed only in one factor: control patients have never attempted suicide. We excluded from the study those patients who suffered from schizophrenia, psychosis, drug or alcohol addiction (i.e. these were their main diagnosis). All patients diagnosed otherwise were included in the study. We used a matched group design: suicidal patients were compared to a non-suicidal control group of “social twins”, by matching them on the following variables:

- Age group (grouped by 10 years)
- Gender
- Education
- Diagnosis according to ICD-10

As we mentioned above, the case group and the control group only differed on their history of presence and absence of suicidal behaviour. For both groups, the following test-battery was used:

- Weissman’s Dysfunctional Attitude Scale (Weissman, 1979; Tringer’s revised version, completed by specific Hungarian data)
- Folkman and Lazarus’s Coping Questionnaire, edited by Kopp and Skrabski (1994)
- Beck Depression Inventory
- Hamilton Anxiety Scale
- C-symptom Scale (Derogatis’s Symptom Distress Checklist).

All members of both groups completed the above tests. Suicidal patients completed the questionnaires within a week after their suicide attempt. Participants were compared based on their scores on the above 5 scales, and their subscales by two-tailed t-test. We gave the level of significance at $p < 0.05$. In this paper we are going to discuss our results based on 80 participants. The full data set is presently under going multivariate statistical analysis.

Results

There was no statistically significant difference between suicidal and non-suicidal groups on the C-scale, and its subscales (i.e. there was no difference regarding their various symptoms), except for irritability. It appears, that suicidal patients are irritable to a greater degree; they give more intense responses to outside stimuli. At the same time, their psychopathological state, and their symptoms are not more severe than their matched control's. There was significant difference between the two matched groups on the following three subscales of the Coping Questionnaire: 1) Problem Analysis, 2) Emotional and Impulsive Behaviour, 3) Adaptation. There was no significant difference between the two groups in their scores on the Hamilton Anxiety Scale, and the Beck Depression Inventory regarding the severity of their depressed and anxious symptoms. Results from the Dysfunctional Attitude Scale are partially

Table 1: Dysfunctional Attitude Scale. Comparison of the sample of suicidal patients (N=50) with their non-suicidal social twin-pairs (N=30); two-tailed t-test

No.	Item	Suicidal individuals		Control group		<i>p</i>
		Mean	Std. dev.	Mean	Std. dev.	
10.	I must be happy all the time.	-0,02	2,12	-1,14	2,19	0,002
25.	One can not influence what happens to him/her, but it depends on the person, how he/she thinks about it.	-0,96	2,09	-2,13	1,32	0,012
63.	It is possible, that someone gets reproached, but he/she does not notice it.	0,87	1,72	-0,09	2,14	0,015
77.	If I make mistakes, I can learn from them.	-1,95	1,34	-2,59	0,96	0,006
92.	My happiness depends on others, rather than on me.	0,13	2,07	-1,09	2,34	0,017
106.	It is impossible to help me.	-0,32	2,01	-1,90	1,57	0,042
110.	If I fail once, I try again and again.	-0,81	1,77	-1,90	1,44	0,043
116.	It does not bother me if the person I love loves other people as well.	0,54	2,3	-0,91	2,32	0,028
117.	If things are going well, soon something bad will happen.	0,18	2,00	-1,32	2,27	

Note: only significant items of Dysfunctional Attitude Scale are presented in the table.

similar to those of previous studies described in the introduction (Beck et al., 1975; Fawcett et al., 1990; Macload et al., 1997).

The scores of the two groups were compared on each item of the dysfunctional Attitude Scale individually (see Table 1). We found significant differences on 9 items, using pair-wise comparisons. The data suggests suicidal patients possess dysfunctional attitudes, which might make them vulnerable to suicidal behaviour. For instance, they feel that they must be happy all the time, and if this is not the case, they feel out of luck, and unhappy. The feeling of hopelessness is an important factor: suicidal patients evaluated their situation and state more frequently as something they could do nothing about, which cannot be helped. This is related to their external locus of control attitude, according to which they think that their happiness depends more on others than on themselves; moreover, that they could not really influence what happened to them. In addition, they anticipated more negative events coming in the future, than positive ones. Hence, it appears, that regarding suicidal behaviour the variable with the most predictive values is related to the feeling of hopelessness, and the lack, or loss of control, which, in other words, means a constellation of dysfunctional attitudes related to the constant "must of happiness" present in the individual's thoughts. Therefore, our results support the research hypothesis, according to which there exists certain dysfunctional attitudes specific for suicidal individuals. The recognizing of such attitudes may have major importance in the prevention of suicidal behaviour.

Discussion and conclusions

So far, our data shows that patients with the history of suicidal behaviour could not be separated from the non-suicidal control group based on their actual psychopathological state, and the severity of their symptoms (see C-Scale, Beck Depression Inventory). At the same time, however, there were differences between the two groups regarding their coping strategies and dysfunctional attitudes. Those, who have attempted suicide scored significantly higher on three scales of the Coping questionnaire: problem Analysis, Emotional, Impulsive Behaviour, and Adaptation. Therefore, it seems that suicidal individuals are more occupied by the analysis of their problems, and they try harder to adapt than non-suicidal patients; nevertheless, they use an impulsive, acting-out type, strongly affect-modulated problem solving approach, which, at the end, is self-destructive. The acting-out characteristic of the suicidal behaviour is also supported by the fact that those, who have attempted suicide show much less anxiety than their matched control, suggesting, that they have channelled their impulses, and anxiety into suicidal behaviour. Our data also showed significant differences in cognitive distortions, and dysfunctional attitudes. For 9 items of the Dysfunctional Attitude Scale there was a significant difference between the two groups we examined. Suicidal individuals evaluated their situation as hopeless, felt unhappy,

and considered the ongoing events as out of their control more often and to a greater degree than non-suicide patients. This suggests, that such thoughts and attitudes should be considered as cognitive risk factors for suicidal behaviour.

In summary, we can say, that suicidal patients and their non-suicidal matched pairs differed from each other in their coping strategies, cognitive style, and suicidal patients showed specific dysfunctional attitudes, which may be predictive of suicidal behaviour. At the same time, however, suicidal and non-suicidal patient groups did not differ significantly in their symptoms, and the severity of their psychopathological state.

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