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REVIEW

Behavioural therapy of suicidality

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Abstract Suicidal behaviour is a serious public health issue. Suicidal behaviour includes completed suicide, suicide attempts, suicidal intent and/or plans and suicide ideation. Two prominent mechanisms, behavioural deficits, in particular poor problem-solving skills, and a certain cognitive style with overgeneralization, distortion and lack of positive expectations, have been identified in suicidal patients so far. Besides general therapy strategies, including the diagnostic process and a collaborative, confident relationship and strengthening of protective factors, specific behavioural strategies should aim at the modification of the behavioural repertoire and of cognitive strategies. The modification of the behavioural repertoire includes the direct modification of the behaviour, acquiring techniques for stress reduction and learning problem-solving strategies. Applied cognitive techniques comprise such as thought-stopping, examining options and alternatives, fantasizing consequences, externalizing inner voices, and reattribution. Psychotherapy with suicidal patients has a specific feature: It requires high activity of the therapist in terms of motivation and guidance of the patient. Regular assessment of the suicide risk at every session is a must. Nevertheless, the therapist should always be aware that it is impossible to prevent all suicidal acts.

Keywords Suicidality · Psychotherapy · Behaviour therapy · Cognitive therapy

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Introduction

Suicide and suicidal behaviour are serious public health issues. Every year, almost one million people die from suicide, a "global" mortality rate of 16 per 100,000 [31]. Suicide risk is highly increased in affective disorders, schizophrenia, substance use disorders and personality disorders; the lifetime suicide risk (that is the percentage of dead from suicide at 'cohort extinction') was estimated at 6 % for affective disorders, 7 % for alcohol dependence and 4 % for schizophrenia [11]. The treatment of schizophrenia, alcohol use disorders and depression, the three disorders most frequently found in association with suicide, would reduce suicide rates of about 20.5 % from 15.1 per 100,000 to 12 per 100,000 [5]. The World Health Organization indicates that suicide is among the three leading causes of death among those aged 15–44 years in some countries, and the second leading cause of death in the 10–24 years age group; these figures do not include suicide attempts that are up to 20 times more frequent than completed suicide [31]. Suicidal ideation is a common problem, with studies indicating a 1-year prevalence rate of between 2.3 and 5.6 % of the adult population and a lifetime prevalence of 13–15 % [13].

Definition of suicidal behaviour

Suicidal behaviour lies on a continuum from weariness of life, death wishes, suicidal ideation through intent and planning to action. Suicidal behaviour includes completed suicide, suicide attempts, suicidal intent and/or plans and suicide ideation. Furthermore, suicidal behaviour includes so-called suicidal equivalents (i.e. behaviours where an underlying intent to suicide can be assumed, e.g.

undetermined accidents, refusal of food, noncompliance to doctor's advice, etc.) [30]. Most suicidal acts are preceded by a process of varying length, in which the dynamics are highly individual. The suicidal process usually stretches over months.

Treatment of suicidal behaviour

As suicidal behaviour has been a serious health problem, the development of effective and specific treatments of suicidal people requires a clear understanding of mechanisms characteristic of people [7, 8, 17]. Two prominent mechanisms have been identified in suicidal patients so far. The first of these mechanisms involves behavioural deficits, in particular poor problem-solving skills, especially concerning interpersonal problems. Secondly, there is evidence of a bias towards a certain cognitive style with overgeneralization, irrational beliefs, distortion and a lack of positive expectations. Suicidal behaviour is seen as the result of erroneous or faulty logic [2] and an ineffective effort to resolve a problem [19].

Suicidal patients are currently treated with different psychotherapeutic methods (e.g. [14–16]). In contrast to other psychotherapeutic methods, cognitive behavioural therapy is a highly significant treatment for suicidal behaviour [28]; this was shown in a meta-analysis including 28 studies with documented outcome measures up to 2 years [27]. However, treatment is only effective when directly focused on reducing some aspect of suicidal behaviour, but not when focused on other symptoms (such as depression or distress) with a view to reducing suicide behaviour as a secondary effect [27]. The therapeutic approach can follow a process model as described by Dorrmann [9].

A more differentiated analysis of suicidal behaviour includes the affective, behavioural, physiological and cognitive system [20]. The behavioural and motivational systems allow for autonomic activation or deactivation of the individual for response. However, behavioural systems can be consciously controlled under some conditions. Intentional death-related suicidal behaviours include preparatory behaviours, such as financial arrangements, acquiring means to suicide and planning. The physiological system comprises autonomic arousal, along with motor and sensory system activation, which serves to orient the individual for actions, such as fight or flight. The synchronous and simultaneous interaction of multiple systems and potential cognitive misinterpretation during a threat mode lead to escalation and expansion of physical symptoms. The affective system includes (mixed) negative emotions, such as anger, sadness, guilt, anxiety, loneliness, fearfulness, tension, shame and disappointment. The affective system is important for reinforcing adaptive behaviour through the experience of both positive and negative affect [1]. The cognitive system is described as involving all aspects of information processing, including selection of data, attentional process (i.e. meaning assignment and meaning making), memory and subsequent recall. Incorporated within this system is the cognitive triad, integrating beliefs regarding self (being inadequate, worthless, helpless, imperfect, unlovable), others (rejecting, abusing, abandoning) and the future (hopelessness, "things will never change"). The suicidal mode, the representative cognitive triad along with the associated conditional assumptions/rules and compensatory strategies, is referred to as the suicidal belief system [20].

Triggering conditions and predisposing vulnerabilities are such as psychiatric Axis I and II disorders, prior suicidal behaviour, stressful situations, circumstances, physical sensations, loss of interpersonal relationships and anticipated consequences, for example, a wish for silence and self-protection, a wish for safety, a euphoric state, or change of the situation. Furthermore, the learning history (e.g. broken home, absence of close family, previous inadequate problem-solving strategies, suicidal models in the social environment) and the behavioural repertoire (including attitudes to life and death, social attitudes, self-image, dichotomized thinking, field dependence) must be regarded.

General therapy strategies

After having recognized suicidality and the diagnostic process, a highly collaborative, confident relationship has to be established in which clinician and patient work together as a team to identify maladaptive cognitions and behaviour, test their validity, and make revisions where needed. A principal goal of this collaborative process is to help patients effectively define problems and gain skills in managing these problems. Protective factors, such as self-esteem and assertiveness, should be strengthened. As in other effective psychotherapies, behaviour therapy also relies on the nonspecific elements of the therapeutic relationship, such as rapport, genuineness, understanding, empathy, a nonjudgemental conversation style, openness and confidence, acceptance of the patients, open communication of wishes of death, suicidal thoughts and intents, taking suicidality seriously, clarification, determining opportunities of support in the social network, and offering of carrying on the conversation. Furthermore, modification of environmental conditions should also be included in the psychotherapy of suicidal behaviour.

Specific behavioural strategies

From the perspective of behavioural therapists, the reasons behind behaviour are not as important as the fact that the

behaviours can be changed. Specific behavioural strategies should include the modification of the behavioural repertoire and of cognitive strategies. Strategies taught and assignments given aim at the acquisition of behaviour and affect regulation [2, 6]. Behavioural therapy has been adapted for the treatment of suicidality (e.g. [23, 25]). Recent behavioural approaches result in transactional models, which include biological, psychological and social variables. One of the more complex models, which include personal and environmental factors, is the SORCK model [12]. This model summarizes the components that should be assessed to get a picture of a person's problem behaviour: S refers to the stimulus that elicits the target behaviour, O refers to the biological condition of the organism, R refers to the target behaviour, K to the contingency relations between the target behaviour and its consequences and C to the consequences of the target behaviour. As mentioned above, the analysis of suicidal behaviour must also include the affective, physiological and cognitive system.

Modifications of the behavioural repertoire

Direct modification of behaviour

Suicidal behaviour is mainly a stimulus- and consequence-guided behaviour. For direct modification of the behaviour, specific therapeutic procedures are used. Two mainly used techniques are positive reinforcement and aversion relief with the aim of deleting "old" behaviour by contingent reinforcement of the new behaviour. Behavioural deficits should be reduced and new communication forms should be learnt. Furthermore, stimulus and reaction conditions must be changed, too [22]. If specific triggering conditions are found in the contingency analysis, preventive strategies against these triggering conditions should be acquired.

Techniques for stress reduction

Relaxation training is useful in ameliorating many symptoms of stress, for example, reduction in tension. Patients are encouraged to visualize a pleasant, relaxing scene or to use a simple mantra to control distracting thoughts. Rosen and Thomas [18] have shown that physical exercise over the pain threshold reduces self-injurious behaviour. These stress reduction techniques must be trained in several sessions [26] with intervening home practice. Furthermore, new techniques must be trained for reducing tension or getting attention and affection.

Problem-solving strategies

Particularly impaired problem-solving ability has been found to be an important variable in suicidal behaviour [17]. The lack of adequate problem-solving strategies include, for example, the insufficient ability to express emotions, lacking or wrong communication behaviour, small frustration tolerance, impulsiveness and low ability to see alternative possibilities of a solution.

There is considerable consensus about the most effective ways of helping patients to learn focused problem-solving strategies. These are appropriately based on current psychological knowledge of how "normal" problem solving is conducted. The therapist seeks to motivate the person's engagement in problem-solving attempts by identifying the way in which the person's past and current distress has arisen from identifiable and potentially soluble problems that interfere with the ability to realize important personal and interpersonal goals. Once the link between problem-solving deficits and distress is made, the person is encouraged to recognize his or her existing strengths and resources and to consider how these might be advantageously deployed. Although the format of the therapy must be modified for the particular patient, problem-solving training should generally include making a problem list, prioritization of the problems to be dealt with, deciding on a range of possible solutions, selection of a particular solution, often by systematically reviewing the pros and cons of the most likely solutions available and breaking down the implementation of the chosen solution into smaller, more manageable steps. During the problem-solving process, the therapist helps the patient to reframe any difficulties as learning opportunities and to try out new ways of overcoming obstacles to problem solving. In this way, the process becomes iterative, with the desired end-result being that the patient has learned not only how to solve specific problems, but has also learned to solve problems that occur during the problem-solving process.

Activity scheduling

Activity scheduling is another technique implemented in which the client schedules activities he or she enjoyed in the past in order to change emotions by changing behaviours. Such a list of activities includes, for example, exercising, calling friends, going for a walk, going to the store, taking a bath, listening to music or writing a thought record. The patient should start with a few, simple activities and should prepare an activity schedule for a day or a week.

Cognitive techniques

Behaviour change procedures are usually combined with cognitive procedures. Dysfunctional, inadequate, and self-destructive attitudes and cognitions should be changed to reality-oriented thoughts by using cognitive techniques. Cognitive procedures aim to identify and modify negative or maladaptive cognitions, such as automatic thoughts,

Table 1 Techniques used in the treatment of suicidal behaviour

Thought-stopping
Clarification of the idiosyncratic meanings
Questioning evidence
Reattribution
Examining options and alternatives
Alleviating catastrophes
Fantasizing consequences
Evaluating advantages and disadvantages
Making a virtue out of necessity
Directed association
Paradox exaggeration
Use of rating scales
Creation of substitute pictures
Distraction
Cognitive dissonance
Naming cognitive distortions (identification of own misconceptions)
Externalizing inner voices
Self-instruction
Direct contradiction

overgeneralizations and catastrophic thinking, that contribute to problematic behaviours and emotions, which in turn further influence and maintain dysfunctional thought processes [2, 3]. Cognitive behavioural therapy is considered a process of "guided discovery", implying that the therapist acts as a catalyst and guide to help clients understand the connection between their thinking and ways they feel and act. The key strategy used in CBT is cognitive restructuring [2, 3]. Thereby several techniques are used, which are listed in Table 1.

Thought-stopping is a technique for eliminating persistent worry or obsessive *thoughts* and works by training the patient to say "*stop*" while thinking specific *thoughts*. The patient can imagine a stop sign or hearing an alarm clock.

The therapist cannot assume that he understands the patient's words without clarifying questions (*clarification of idiosyncratic meanings*). The therapist must clarify the meaning of specific words for the patient, for example, 'depression', 'a failure', 'fearful', 'upset'.

Each of the patients can be helped to identify and question the evidence that is used to maintain ideas and feelings (*questioning the evidence*).

Reattribution helps patients to step back from and look at the many contributions to an adverse outcome. For instance, a patient who blames herself for the break-up of a relationship can realistically assess her level of responsibility in producing a particular outcome.

Suicidal individuals often view suicide as the only option available. Therefore, suicidal individuals should consider other options and alternatives (*checking options and alternatives*). The suicidal person should see that suicide is an option, but not an attractive one. Having one more option increases the options of a suicidal person to more than 100 %.

For *alleviating catastrophes,* the therapist should encourage the patient to imagine, for example, by questioning "If such or such event occurs, what would happen in the worst case?" and "How would your life be different from your life now?" Patients can recognize exaggerations and can re-evaluate the situation of their life realistically. However, therapists should use this technique carefully; otherwise, the patient may think that he is not being taken seriously with his fears and concerns.

Furthermore, the patient should imagine certain situations, describe pictures and fears concomitant the situation, and *fantasize consequences*. The patient often recognizes the irrationality of his ideas during the description. However, if he describes probable or realistic consequences, the potential risks should be differentially evaluated and coping strategies must be developed.

In order to provide a more balanced perspective in contrast to "all-or-nothing" thinking, the patient should make a positive/negative list, for example, for staying in the relationship and for separation (*weighing advantages and disadvantages*). This should facilitate the patient's control over their feelings, actions and thoughts.

Sometimes losing something means gaining something more valuable (*making a virtue out of necessity*), for example, loss of a job provides new career perspectives.

Directed association means the conscious management of ideas, thoughts and pictures in order to get the relevance of certain things and to disclose underlying assumptions or schemes. The therapist can ask "And then?", "What would happen in this case?", and "And this would be so bad, because?".

The patient should drive dysfunctional beliefs to the extreme (*paradoxical exaggeration*). Thus, the client can re-evaluate his situation and can maintain a more balanced position ("Nobody has ever helped you?"). However, this technique should be used carefully; otherwise, the patient could feel being made a fool of.

Suicidal patients, who often tend to polarized thinking, can put things into a new perspective *using rating scales*.

Dysfunctional images should be replaced by positive images or at least better manageable images (*substitute pictures*). For example, a patient can imagine himself sitting at a table in front of a cake and pushing it away slowly. If somebody suffers from nightmares, he can imagine the dream changed.

As there is a natural limit to things you can think about at the same time, the cognitive capacity must be filled with neutral thoughts; thereby dysfunctional thoughts can be blocked for a certain time (*distraction*).

Conflicts between internal beliefs and behaviour result in *cognitive dissonance*, that is, internal tension. In the therapy of suicidal patients, cognitive dissonance can increase. If a patient tells the therapist his death will be meaningless for others, the therapist can stress the negative consequences on his children. Cognitive therapy aims in the functional dissolution of the cognitive dissonance.

Externalizing of inner voices helps the patient to decide whether these beliefs can be kept or if his beliefs must be changed.

Self-instruction is a cognitive technique that aims to give clients control over their behaviour through guided self-talk that gradually becomes covert and self-generated.

Special problems of the treatment of suicidal patients and conclusions

Multimodal diagnostic procedure and therapy is necessary in the treatment of suicidal behaviour. Concomitant pharmacotherapy must be given, if necessary. For the integration of psychological, pharmacological and social treatment, a multidisciplinary team including psychologists, psychiatrists, social workers and occupational therapists is necessary. During treatment, the suicide risk must be regularly assessed. The assessment of suicide risk establishes a basis for the judgment about the degree of acute risk (imminent, high, moderate, low) and identifies treatable risk factors and protective factors. In the first 10–14 days of antidepressant treatment in depressed patients, the therapists should be aware that the risk of suicidal behaviour is still high [29].

Psychotherapy with suicidal patients has some specific features: It requires high activity of the therapist in terms of motivation and guidance of the patient. Behaviour therapy aims on change of behaviour, but particularly on a change of the inadequate cognitive style (suicidal acts are subjectively meaningful, but objectively a wrong problem-solving strategy).

The crucial criterion for the estimation of the 'severity' of suicidality is the judgment of the patient's capacity to negotiate a no-suicide contract. If suicide risk is high or there is latent suicidality, such a 'no-suicide contract' should be made [9]. Suicide risk must be estimated as very high if the patient has psychotic symptoms or is hopeless [10], and risk for attempted suicide must be estimated as high if the patient has stressful life events, alcohol use, intermittent psychiatric medication adherence, previous suicide attempts and prescribed antipsychotics [21]. A 'no-suicide contract' is simply a short-term stop gap. The process of the no-suicide contracting improves the communication with the suicidal patient and helps the patient to gain an understanding of his suicidal ambivalence [24].

The therapist should always be aware that it is impossible to prevent all suicidal acts. To minimize risk for malpractice actions, suicide risk should be assessed at every session, the patient should get adequate treatment and appropriate management of suicidal crises, and be hospitalized if necessary [4]. In order to be prepared for defence against a malpractice complaint, the therapist should be aware that besides reasonable care foreseeability determines liability in a suicidal death. Therefore, contemporaneous documentation (the recording of observations and judgements) is the sine qua non of risk management strategies.

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