Severe mental disorders from a cognitive-behavioural perspective: A comprehensive review from conceptualization to intervention

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Author's note

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Abstract

Research has shown that hallucinations and delusions (characteristic of severe mental disorders) are relatively common. Many people in the general population will experience mild instances of such events at some point in their lives. However, for others, these are very disturbing events. Cognitive-behavioural models argue that these differences result from the interpretation of those same experiences. Therefore, cognitive behavioural therapy seeks to know the factors that contribute to the development (e.g. early traumatic experiences) and maintenance (e.g. selective attention, safety behaviours, disruptive control strategies) of psychotic processes, from the deep and isolated understanding of each patient's experience of specific symptoms (e.g. paranoid delusions) rather than their syndromal diagnosis (e.g. schizophrenia). The case formulation for each complex psychotic symptom results from the initial intake assessment at the start of a prospective intervention. This article reviews the cognitive behavioural conceptualization of psychotic symptoms (i.e. auditory hallucinations, delusions and negative symptoms), as well as the key areas of assessment and therapeutic interventions proposed by these models.

Key-words: Cognitive-Behavioural Therapy; Psychosis; Hallucinations; Delusions

A growing number of meta-analyses have supported the use of Cognitive Behavioural Therapy (CBT) in the treatment of psychosis [1-14]. Overall, findings suggests that cognitive behaviour therapy for people with psychosis (CBTp) can be beneficial in reducing positive and negative symptoms, hallucinations and delusions, while also improving overall functioning and level of disability, both during post-intervention and follow-up.

In one of the most recent studies [1], a systematic review and meta-analysis of 10 controlled trials evaluating low intensity CBT (i.e. fewer than 16 therapy contact hours) dealing with psychosis symptom outcomes, found significant between-group effects on psychosis symptoms during post-intervention (d=−0.46) and follow-up (d=−0.40). It showed that low intensity CBTp led to significant post-intervention, between group differences in psychotic symptoms compared to control conditions with a medium effect size. Where follow-up was measured, this effect was maintained, with the follow-up time period ranging from 3 to 18 months.

Pfammatter, [2] in a systematic review of findings of all relevant meta-analyses on CBT in the treatment of psychosis, demonstrates considerable differences in controlled efficacy; CBT for psychosis has long-term effects on the persistence of positive and negative symptoms, yet without any effect on acute positive symptoms and with limited benefits as an early intervention.

Gould et al. [3] conducted a meta-analysis using all available controlled treatment outcome studies of cognitive therapy (CT) for psychotic symptoms in schizophrenia. The mean effect size for reduction of psychotic symptoms was 0.65. The findings suggest that cognitive therapy is an effective treatment for patients with schizophrenia with persistent psychotic symptoms. Follow-up analyses in four studies indicated that patients receiving CT continued to make gains over time (ES=0.93).

Philling et al. [4] conducted a meta-analysis of a wider range of randomized controlled trials and compared both standard care and other active interventions. As in other meta-analyses, CBT produced higher rates of significant improvement in mental state and demonstrated positive effects on continual measures of mental state at follow-up. CBT also seems to be associated with low drop-out rates.

Wykes et al. [5] in a meta-analysis of thirty-four CBTp trials, found overall beneficial effects for the target symptom (d = 0.40) as well as significant effects for positive symptoms (32 studies), negative symptoms (23 studies), functioning (15 studies), mood (13 studies), and social anxiety (2 studies) with effects ranging from 0.35 to 0.44.

Dickerson [6], in another meta-analysis, reviews seventeen CBTp studies and found the strongest evidence for the benefit of that to outpatients with residual symptoms including hallucinations, delusions, or negative symptoms.

Turner et al. [7] conducted a meta-analysis of comparative outcome studies of psychological interventions for psychosis. Forty-eight outcome trials, with 3,295 participants, compared psychological interventions for psychosis. Results showed that cognitive-behavioural therapy was significantly more efficacious than other interventions in reducing positive symptoms (g=0.16).

In another meta-analysis, van der Gaag et al. [8] reviewed eighteen studies of CBT using individually tailored case formulations aimed at reducing hallucinations and delusions. The statistically significant effect-sizes were 0.36 for delusions and 0.44 for hallucinations. Contrasted with active treatment, CBT for delusions lost statistical significance (0.33), but the effect-size for CBT for hallucinations increased (0.49). Blinded studies reduced effect-size in delusions (0.24) and increased it somewhat in hallucinations (0.46). The authors conclude that CBT is effective in treating auditory hallucinations. CBT is also effective for delusions, but the results must be interpreted with caution, because of the heterogeneity and the non-significance of effect-sizes when compared with active treatment [12].

Velthorst et al. [9] reviewed all available evidence regarding the factors contributing to the improvement of negative symptoms and the identification of subgroups of patients that may benefit the most from CBT directed at ameliorating negative symptoms. A total of 35 publications covering 30 trials in 2,312 patients, published between 1993 and 2013, were included. The results showed studies' pooled effect on symptom alleviation to be small and heterogeneous in studies with negative symptoms as a secondary outcome. Similar results were found for studies focused on negative symptom reduction. Meta-regression revealed that stronger treatment effects were associated with earlier year of publication, lower study quality and with CBT provided individually (as compared with group-based).

There has been some debate about the degree of effect of CBTp [15]. However, taking into account the severity of the psychotic disorders and the lack of other proven effective therapeutic responses, these findings should be sufficient to defend the use of CBTp (as a primary or adjunctive therapy) to help reduce the suffering of patients with severe mental disorders.

1. Understanding serious mental disorders

The cognitive behavioural therapeutic approach is based on two central theoretical assumptions: (1) that thought influences affect, behaviour and biology, and (2) that it is not the events themselves that disturb people but the interpretation they make of them [16].

In addressing serious mental disorders, cognitive behavioural models focus on specific experiences (e.g. auditory hallucinations, persecutory delusions, delusions of grandeur), rather than global diagnoses (e.g. schizophrenia) when trying to understand the vulnerability factors, activators events and maintenance factors involved in each of these specific symptoms. The complexity of the psychotic experience requires a idiosyncratic formulation for each. Cognitive-behavioural case formulation provides insight into how life experiences and reactions to events have led to patients' particular interpretation of voices and strange thoughts. This personal explanation allows therapists to understand how patients' reactions are understandable and justified in their eyes.

2. Understanding auditory hallucinations

The cognitive-behavioural model considers auditory hallucinations to be relatively "normal" experiences. In fact, it is relatively common for people from non-clinical populations to hear voices [17]. Research shows that individuals experiencing auditory hallucinations had a bias towards externally attributing their internal and private cognitions, suggesting a relation between voices and inner speech [18,19]. Based on empirical evidence, it is arguable that people who hear voices are actually misinterpreting their own thoughts as speech that they then attribute to an external source. This misinterpretation seems to be more likely to occur in environments with many different auditory stimuli (e.g. a noisy coffee shop) or in the absence of any external auditory stimulus. From this perspective, more than the experience of hearing voices, it is the meaning that each person attributes to those voices and the way they react to hearing them that determine the disturbing nature of the experience. For example, during bereavement for a loved one, it is not unusual to hear the voice of the person who has died. Some people consider this to be relatively understandable and undisturbing. This happens when people make positive attributions to hearing voices (e.g. as a sign that the person "is still with me"), or they realize that hearing voices can be seen as related to experiencing life stress. However, if people attribute the voice to malevolent external sources from which they feel the need to protect themselves, their answers will be very different. So it is the meaning, the type of meaning attributed to the voices - i.e., how they threaten patients' psychological or physiological personal integrity (e.g. "I'm going crazy," "the devil is talking to me", "if I not obey voices they will hurt me") and the resulting reactions to them (i.e. adoption of safety behaviours) that determine the person's relationship to the voice(s). Hallucinations are problematic when they are in-

terpreted by the patients as representing powerful and destructive forces. The set of cognitive, emotional and behavioural reactions will be determined by who we are, by previous experiences we have had, as well as by the context in which the voices occurs [19,20].

Hearing voices may arise in response to particularly stressful life circumstances or in times of particular vulnerability, such as situations of profound social isolation, sleep deprivation, bereavement, physical illness, drugs, and traumas such as sexual abuse in childhood or situations of armed conflict [21,22]. Romme and Escher [23] claim that most people seeking help hear voices following a traumatic event. Accordingly, experiencing voices may be part of a natural process and, in some cases, may have even a protective effect. Negative events often produce ambiguous stimuli, generators of intense and negative emotions (e.g. as anxiety), which lead the individual to urgently search for a meaning [24]. Acceptance of an explanation provides a sense of relief, even if that explanation is bizarre.

To sum up: (1) in cognitive behavioural models, hearing voices is conceptualized as a relatively normal experience; (2) beliefs about these voices and subsequent attempts to live or to deal with them are central to experiencing these events as disturbing or not; (3) the psychosocial environment, such as early experiences and individual psychological functioning, are key to understanding why people hear voices and why they should respond to them in different ways.

2.1. Case study

This case illustrates a cognitive behavioural formulation for an experience of auditory hallucinations.

John is 22 years old. His upbringing was very strict and his father often subjected him to frequent threats and violent physical punishment. The father was unstable, highly critical and emotionally distant and had high aspirations for his son while simultaneously accusing him of being weak and incapable. The mother was submissive and sad but loving. John was a shy and timid child who became a meticulous perfectionist; he was stubborn and very demanding of himself, yet with recurring doubts about his capabilities. Due to the untimely death of his father while John was attending university, the son was forced to interrupt his studies to take over the family business. These life experiences predisposed John to develop beliefs (about himself, others and the world) which created in him the need to have absolute control over his behaviour, and to believe in the inevitability of punishment, either because others would not recognize his efforts or would not be trustable, or because he saw life as unfair. Shortly after his mother's death, John began to hear a series of derogatory voices that he believed were drawing up a plan to punish him. Following the death of his moth-

er, he felt unprotected and vulnerable and experienced increased levels of anxious activation and hypervigilence which appear to have given rise to beliefs that drove meaning-making in a set of different experiences.

In social situations, John was be hypervigilant to the voices, especially when they whispered to each other (or rather, when he found it more difficult to hear them). John believed that the voices were conspiring against him and that it was during these times that he could hear the plans the voices had for him. He also started to be suspicious of strangers, as he believed that voices would request the cooperation of a number of people to put their plans into practice. The thought that the voices were planning to unleash a plan against him, the perceived threat and the increased attention to possible external threats, triggered a physiological activation. Trying to deal with these thoughts and emotions, John developed a vast repertoire of safety behaviours such as staring at people, walking faster, logging out or running to a safe place (e.g. church). What came out of the situation was the conviction that if he had not carried out those activities something terrible would have happened. This interpretation, in turn, increased the power of his beliefs and maintained the dysfunctional cycle.

[INSERT SCHEMA 1. AROUD HERE]

3. Understanding delusions

Patients with severe mental disorders develop and maintain delusions in the same way that sane people. As well as auditory hallucinations, "false beliefs" are common in the general population and are best seen as located along a continuum [21,25,26]. For example, some religious or spiritual beliefs that may be considered delusional are formed and maintained in the absence of strong factual evidence. There are also groups of people who share strong convictions regarding the existence of conspiracies, extra terrestrial and paranormal experiences. This means that everyone, in one way or another, has personal beliefs which are more or less unusual.

From the cognitive-behavioural perspective, delusions are seen as beliefs that match patients' attempts to give meaning to their experiences. Take, for example, persecutory (or paranoid) beliefs. Paranoid thoughts can be seen as appropriate strategies that, under certain circumstances, become excessive [27]. Maintaining some degree of reserve and suspicion about the intentions of others can be considered an appropriate and adaptive strategy. The lack of trust in others is often accompanied by and results in high levels of anxiety, which, in turn, may lead to hypervigilence. In this case, when they feel very activated and threatened, people often see the environment as an ex-

ternal source of threat. Inevitably, personal meaning construction will result in explanations based on previous experiences related to beliefs about themselves, others and the world. Thus, it is understood that people who have undergone traumatic past experiences are much more vigilant to interpersonal threat than people who have not. Instead of being senseless and abnormal, those experiences seen as delusional are a rational, albeit sometimes unlikely attempt, to make sense of triggering stimuli (internal and external) [28].

Safety behaviours play an important role in belief maintenance. The way people try to deal with unusual beliefs can increase or decrease the disfunctionality that they introduce into their lives [29]. Healthy responses (such as spending more time with friends, seeking psychological help, openly asking the person what their intentions are, and adopting open forms of perceived self-protection) can increase people's quality of life. Other potentially less healthy safety behaviours (such as avoidance or social isolation, substance abuse or developing behaviours that tend to attract the attention of others) may reinforce the belief through operant conditioning, selective attention, cognitive biases and behavioural patterns that draw attention to the individual.

In sum, delusional beliefs can be conceptualized as patients' attempts to make sense of their personal experiences. These beliefs result from a complex interaction between psychological, emotional and behavioural factors.

4. Understanding negative symptoms

Following Beck [30], individuals with more autonomous personalities who are, therefore, less likely to apply for or receive help are more likely to show "negative symptoms" in response to psychosis. Unable to share their difficulties and even recognize the need of help, these individuals respond to positive symptoms by moving away physically and emotionally from others and the world (e.g. blunted affect, lack of interest, social isolation, lack of thought). Negative symptoms may be more widespread in patients with high levels of vulnerability and low capability to cope with stress, who often develop social phobia, agoraphobia, and tendencies toward institutionalization [21,31].

Negative symptoms can also be understood as cognitive reactions or safety behaviours and as emotional responses adopted following the threat of delusional beliefs, perceived social threat, and anticipated failure in tasks and social activities [20,30,32]. In the face of perceived risk (associated with voices or delusional beliefs) and feeling insecure, patients may restrict or limit their social and work activity, or they may react isolate themselves, or hide their emotions and thoughts - these reactions may mask some of the designated negative symptoms. Other negative symptoms as affec-

tive flattening may be develop from demoralization, perhaps related to past traumatic events; avolition may result from the perception of being under pressure and subject to failing expectations [31]. Inertia may also appear due to patients' perception of limited psychological resources, a perception that motivates them to conserve energy by minimizing investment in activities requiring effort [20,21].

5. Cognitive Behavioural Assessment

The complexity of bio-psico-social factors involved in psychosis and the high co-morbidity means that assessments should be sensitive, detailed and focused on these different factors and contextual influences. The collection of information and the preparation of a case formulation of what has led to and maintained the psychotic experience require a collaborative relationship between the therapist and client. An empathic, authentic and non-judgmental attitude helps the therapist engage the patient in a supportive, non-confrontational relationship [33].

The aim of assessment is to understand the patients and their experiences. To do so, therapists elicit a detailed life narrative, which enables them to draw up a comprehensive picture of patients' psychotic experiences and empathize with their situation. The case formulation of causality and maintenance of symptoms is also shared with the patient, and altered throughout therapy as new information comes to light.

Sessions and the overall therapeutic process should progress at a pace comfortable to patients. Attention should be paid to the emotional environment when trying to collect information. Therapists should start with what the person experiences as more dissonant and what needs to be heard, so as to maximise possibility of building a good therapeutic alliance and achieving treatment compliance. It is necessary to assess: the risk (to themselves and / or others), comorbidity (e.g. anxiety, depression, substance use, suicide risk), any vulnerability factors (possibility of being exploited, abused, assaulted, discriminated), social factors (e.g. quality of housing, occupation, prospective neighbours), family relations, social relationships, daily routine, good work skills…

The use of scales to evaluate both specific and general aspects is encouraged in order to monitor progress, and the results should be shared. It is also important to discuss with patients any previous therapeutic experiences that they consider to have been more and less productive and what they would like to achieve with the current process (objectives and expectations) [34].

5.1 Assessing voices

To assess voices some authors [35,36] propose a functional analysis based on event activators, beliefs and consequences (ABC). This strategy allows us to understand how beliefs about the events are central to disturbance maintenance and to helping patients understand that the problem is not the voices in themselves, but rather the meaning assigned to them.

It is important to analyse in detail the voices in terms of:

- where and when they occur

- how many voices have been heard

- whose voices have been heard

- what they have said

- how they have spoken (e.g. third person)

- the form of voices (e.g. internal or external)

- how patients react to the voices

- how powerful the person feels that these voices are

- what meaning the person attaches to the voices

- what patients do to deal with them (protection strategies / safety behaviours)

- what the frequency, intensity, duration of the events are and how the beginning of such (to potentially establish a baseline for understanding and measuring any future progress)

5.2. Assessing delusions

The therapist should address delusional thoughts and beliefs in an open, supportive, sensitive and curious way. Initially, it is more important to listen than interpret. The CB approach focuses on understanding the thought/belief in a multidimensional analysis. In this sense it is important to explore:

- the origins of the thoughts or beliefs

- the strength of belief in these thoughts (i.e. how much the person believes them)

- in which situations the belief is more active

- the usefulness or uselessness of the belief

- the relation between thoughts/beliefs, emotions and behaviours (how the person feels and what takes place when this belief is enabled).

CBTp [37] argues that beliefs, even if inaccurate and dysfunctional/useless, are contextually reasonable and are maintained through behaviours of security/protection to reduce the probability of the feared outcome. In the end it is important to:

- establish a functional analysis of delusional thoughts, by reporting and (self) monitoring;

- identify the developmental path of delusions by way of patients' autobiographical narratives.

6. Therapeutic interventions

6.1 Interventions with auditory hallucinations

CBTp assumes that most people hear voices but do not consider them necessarily problematic or disturbing. Therefore, more than hearing voices, understanding the disorder will be based on the belief about the voice. In the case of hearing voices, patients should be listened to empathically. They should receive help in describing their experience with voices and disclosing information about their beliefs in them. Therapists should validate patients' emotional distress and their struggles with the voices, as well as summarize patients' experiences using their own words to ensure they have been properly heard. The normalization of patient experience helps identify factors that make them susceptible to the development of maladaptive beliefs. Educating patients about the fact that many people have unusual experiences in a variety of different circumstances (for example, before stressful events, hyperventilation, with hunger, thirst, desire to sleep) can prevent catastrophic interpretations of voices, reduce anxiety and the feeling of isolation. Learning more about these experiences will equip the patient to become more able to recognize their own experience as relatively normal and the role that evaluation/interpretation play in their distress. On the other hand, it is also very important that people realize the role that their previous life experiences (e.g. losses and other negative experiences) play in the content of the voices.

The formulation allows patients to develop a much more compassionate understanding of the strategies used to survive (at least from an emotional standpoint) their life experiences. With some doubts about the belief in the absolute power of the voices, patients undergo guided discovery, and the formulation is reviewed to generate alternative explanations (e.g. that event took place while I was under great stress; I may have not slept properly; there were times when voices did not occur and when nothing bad happened to me). Over time, beliefs about the voices are monitored. By monitoring the occurrences and linking them to internal and external events (e.g. remembering and thinking about childhood; talking by phone with family members), it hoped that the belief about the power of voices will diminish. The belief should be discussed using Socratic questioning: examining the evidence for and against the belief, asking the patient to evaluate the content of the beliefs from the perspective of another person, and generating more useful and adaptive hypotheses for understanding the situation (i.e. alternative routes to previously maladaptive assumptions). As the

strength of belief progressively decreases, the patient will be able to engage in activities that give pleasure and a sense of mastery and to record them.

6.2 Intervention with delusions

The basic premise of therapeutic work at the level of delusional thoughts is that it is the meaning of events as opposed to the events themselves that dictates the way we experience the world. In this context, thoughts are seen as personal constructions and not as facts. The goal of intervention involves re-examining the maladaptive meanings causing malaise and generating alternative, more functional meanings.

CBTp proposes two main approaches to delusional beliefs: intervening in the content of thoughts or in the way of thinking about the thoughts (meta-cognition). Work on the content of thoughts focuses, at first, on helping the patient to recognize the thoughts and the emotions that accompany them, and then providing information about the interaction between events, thoughts, emotions and behaviours, so that patient can understand how powerful emotions can lead to plausible but incorrect conclusions. Patients are educated about potential events and about how to take note of any dysfunctional thoughts using a self-registration technique that is suitable for all situations when they experience high anxiety. This not only trains patients to identify skills for dealing with dysfunctional thoughts and emotions but also enables them to re-examine the conclusions reached about a specific event and generate less distressing and more useful interpretations of the events. The training in this type of technique gradually becomes the fittest patient using verbal reassignment strategies such as identifying and questioning specific thoughts, so that patients begin to use habitually it without taking notes. Writing a list of questions can help patients focus and use these interventions when thoughts occur. Sample questions include: Is this a useless thought? What other alternative explanations are there? Am I giving too much importance to this thought? What would you tell to a friend who shared this thought with you? Have I thought of this before? How many times have these kinds of thoughts turned out to be right? By learning to distance themselves from the content of the thoughts and to understanding how their thoughts are activated, patients will see a decrease in the intensity of their emotional response. Thinking about thoughts thus helps people to recognize that thoughts are just that. They may have been useful at a given time in patients' lives, but they no longer fit the present.

It is also very important to create situations in which patients can try out different responses. Safety behaviours are an integral part in maintaining the strength of conviction of thoughts and beliefs. They tend to deny the patient access to all the necessary information on which to base their

assessment of a given situation. Suggesting and encouraging someone to give up something that feels right needs to be done collaboratively and sensitively.

The rationale behind behavioural experiments needs to be discussed thoroughly in order to clearly identify the belief to be tested. The discussion of the problems likely to arise in the course of the experiment, as well as the collaborative construction of ways to deal with these problems, must be specified and recorded. The significance of the result of the experiment also needs to be identified and discussed using several possible alternative explanations.

Behavioural experiments that lead patients to experience the change have the potential to empirically permit the person to disconfirm the belief, resulting in more effective and tangible learning.

6.3. Intervention with negative symptoms

The meta-analysis of Wykes et al. [5] showed that, despite the fact that CBT interventions are primarily designed to target positive psychotic symptoms, negative symptoms also registered beneficial effects (effect size=0.44). It may turn out that, those patients whose positive symptoms have been treated also show improvements in negative symptoms. To date, however, CBTp manualized protocols have mainly focused on the reduction of positive symptoms and few have systematically addressed negative symptoms.

Generally, treatment conceptualization focuses on symptom-management, activity scheduling, the identification of stressors, problem-solving training, social skills training, relaxation techniques, and cognitive remediation [31].

The targets of CBTp in patients with negative symptoms are the generalized expectations of failure and discomfort in social situations, which might be associated with a lack of motivation, avolition, and anergia [20,31]. Another psychotherapeutic target is the defeatist beliefs, which have been shown to mediate the relationship between cognitive impairment and both negative symptoms and functioning [38]. Reducing defeatist beliefs by means of cognitive treatment strategies could therefore enhance patients' activity rate. Further targets are social cognitive deficits regarding emotion detection, emotion expression, and social schemata which can be viewed as mediators between neurocognition, functioning, and negative symptoms such as affective blunting as well as social and emotional withdrawal [31,39]. Fostering adequate perception of social situations, improving emotion detection and expression, and training required skills are plausible targets of intervention for reducing negative symptoms [31,40].

Conclusion

Although CBT for psychosis is still under development and its empirical validation is still undergoing testing, many studies have shown that CBTp provides important benefits for patents with severe mental disorders such as psychosis. The aim is not to cure but to assist people in coping with and recovering from the distress resulting from psychosis. This paper highlights – not in an exhaustive way - some CBT conceptual principles about serious mental disorders, the hearing of voices and unusual beliefs, as well as some strategies and techniques that may be useful in working therapeutically with these disturbing symptoms. CBTp applies general principles of cognitive behaviour therapy for the treatment of psychotic symptoms. The intervention protocol is based on a careful assessment and individual formulation of patient specific symptoms. In the end, the key premise of the therapeutic work within this approach is that patients' disturbing experiences should receive attention and that CBTp can help them to make psychotic experiences less threatening, less dysfunctional, less distressful and more manageable.

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Relevant early experiences
Upbringing characterized by very strict and restrictive codes of conduct, accompanied by frequent and violent physical punishment; a severe, critical, emotionally distant and unstable father; shy and insecure child; meticulous, perfectionist and stubborn teen; unable to continue with higher education; obligated to great professional/family responsibilities

Nuclear beliefs
I am weak and incompetent
Others are not to be trusted
The world is unfair

Intermediate beliefs
I have to push myself very hard not to make mistakes otherwise I will be punished.
Whatever I do the others will try to take advantage of me and hurt me
Never anything will be favourable to me, despite my efforts

Precipitant Event(s)
Mother's death; family business management

Stimulus activator
e.g. walking on a busy street;
being in a bar with lots of people

Hypervigilance / forward to hearing voices

Voice(s)
"Let's do it now?"

Emotions and physiological symptoms
Fear, panic, vulnerability, lack of protection

Behaviour
Seeking to identify individuals at the service of voices, brisk walking, leaving the scene, isolating themselves

Interpretations / thoughts
"I am in great danger..."
"They will do it now..."
"I will not be able to prevent this from happening..."