**INTRODUCTION**

In the introduction to her chapter on Panic Disorder (PD), Greenberg (1995) cited the following Russian proverb: ‘Fear has big eyes’. Indeed, exaggerated thoughts of danger and therefore the fear is the main characteristic of anxiety disorders. Anxious patients perceive too much risk and danger and have hypervigilance for potential sources of future harm. According to the Center for Cognitive Therapy in Philadelphia, these features are the most apparent in patients suffering from PD. One recent study of health-care utilization found that patients with PD are among the most frequent users of out-patient mental health services (Boyd 1986). It is suggested to be familiar with the conceptualization and treatment of panic before considering the treatment of other anxiety states, since panic is one of the simpler problems to model and offers an introduction to events which are recurrent across other disorders. Key relationships between cognition, behavior, and affect maintain the anxiety problems and especially the panic attacks.

**Mode of Onset**

PD usually starts suddenly with the most common age of onset being in the mid-to-late twenties ( Rapee 1985). Stressful life events are quite common around the time of onset. These events involve threat of future crisis. PD patients initially do not conceptualize their problems as psychological. When confronted with somatic

**ÖZET**


**Anahtar kelimeler:** panik bozukluğu, panik ataç, kırık döngü, biliseli davranışı terapi

**ABSTRACT**

Perceiving too much risk, danger and hypervigilance for potential sources of future harm, having exaggerated thoughts of danger and fear are basic features of anxiety disorders. These features are most apparent in patients suffering from panic disorder. Onset of panic disorder is around mid-to-late twenties. Panic patients initially do not consider their problems as psychological. Only when all medical searches result in lack of diagnosis, they finally tend to seek psychiatric help. However they still retain their doubts regarding their health. A panic attack can be situational (cued) or spontaneous (uncued) and consists of an intense feeling of apprehension, fear and/or impending catastrophic interpretation and discomfort associated with distressing sensations. DSM-IV-TR groups these sensations as physical (breathlessness, palpitations, dizziness etc) and cognitive (fear of dying, suffocating, going crazy etc). Clark’s “vicious circle” model of panic deals with the cognitive factors involved in etiology and maintenance of panic attacks. The vicious circle contains three basic elements: emotional reactions, bodily sensations and negative thoughts about sensations (misinterpretations). These elements are linked in a sequence. Once panic attacks have occurred, selective attention to bodily events, safety behaviors patients engage in and avoidance from certain thoughts and situations in order to prevent an attack contribute to the maintenance of the problem. There are three main treatment approaches to panic disorder such as cognitive-behavioral, psychodynamic and pharmacological. Efficacy of time limited cognitive-behavioral and medication treatments has been demonstrated in many studies. In cognitive-behavioral therapy (CBT) the patient is “socialized” to the idea that thoughts and beliefs can be contributing to the panic attacks and anxiety is tried to be normalized. Reversal of the maintaining factors of the disorder is especially emphasized. Components required in CBT are: a) detailed examination of recent experiences of panic b) identifying of the triggers for attacks c) changing the catastrophic misinterpretations using cognitive procedures and behavioral experiences d) working with images e) overcoming avoidance and safety behaviors f) removing any ot-
syndromes such as palpitations, difficulty swallowing or breathing, they first refer to a general physician, or to a neurologist, cardiologist or respiratory clinic. When all these medical searches result in lack of diagnosis, they finally tend to seek psychiatric help. However, these patients still retain their doubts regarding their health.

**Panic Disorder and Characteristics of Panic Attacks**

The essential feature of PD is the occurrence of panic attacks. A panic attack consists of an intense feeling of apprehension, fear and/or impending catastrophic interpretation and discomfort associated with distressing sensations. Diagnostic and Statistical Manual of Mental Disorders-IV-TR (DSM-IV-TR) (American Psychiatric Association 2000) defines these sensations as:

- **Physical**: Breathlessness, palpitations, dizziness, trembling, a feeling of choking, nausea, chest pain, tingling in the hands and feet, hot and cold flushes, sweating and feelings of unreality.

- **Cognitive**: Fear of dying, suffocating, going crazy and so on.

According to DSM-IV-TR, four or more symptoms have to escalate or occur within a ten-minute period to meet panic criteria. Also, the individual should have at least one month of persistent concern about having another panic attack or a significant behavioral change related to the attack. In most of the anxiety disorders, panic attacks are quite common. For example, a social phobic or claustrophobic may panic on exposure to the feared situation. However, diagnosis of panic attack is made when the individual experiences recurrent panic attacks. Panic attacks are not always triggered by entering a phobic situation or anticipating so. Individuals diagnosed as having panic disorder without agoraphobia tend not to be able to identify such situations and show no great situational avoidance. So, panics may be situational (cued) or spontaneous (uncued) (Wells 1999).

Since the attacks tend to be unexpected and intense, this leads the patient to think they are in danger of some physical or mental disaster such as fainting, heart attack, losing control or going mad. Most of the patients are quite anxious in between attacks because they are anticipating another attack. This affects the cognition of the patient and in a way forms an inescapable circle which will be discussed further in the next section. Wolpe and Rowan (1988) argued that the first episode of panic is an unconditioned anxiety response, and the panic disorder arises from fear conditioned stimuli associated with the initial episode.

**COGNITIVE MODELS of PANIC DISORDER**

Cognitions are said to contribute to the development and maintenance of panic attacks. Wells (1999) states the following two cognitive models:

- **Clark (1986)**: Panic patients fear the experience of certain bodily or mental events.

- **Goldstein and Chambles (1978)**: Bodily sensations become conditioned stimuli for the conditioned response of panic. (This is a more learning theory based account of this “fear of fear” concept.) Having suffered one or more panic attacks, patients become hyperalert for bodily sensations and interpret these as a sign of oncoming panic.

Clark’s vicious “circle model of panic” deals specifically with the cognitive factors involved in the etiology and maintenance of panic. Patient in this model interprets the bodily sensations in a catastrophic fashion. These misinterpreted sensations (heart palpitations, breathlessness, dizziness etc.) are perceived as indicators of an immediately impending physical or mental disaster.

According to the model the sensations that are misinterpreted are mainly those associated with anxiety, but other non-anxiety sensations may also be misinterpreted. Non-anxiety sensations include feelings of shakiness or light-headedness caused by low blood sugar, the sensations associated with postural changes in blood pressure, effects of alcohol withdrawal, tiredness, and so on. There is a certain sequence of events occurring in a panic attack. First of all, there is a wide range of stimuli that can provoke attacks. These stimuli can be external (a situation in which the individual has previously experienced a panic attack) or internal (thoughts, images or bodily sensations). A state of apprehension results when these stimuli are perceived as threat. This state in turn is associated with a wide range of bodily sensations. If these sensations are interpreted in a catastrophic fashion a further increase in apprehension occurs. Finally, this produces a further increase in bodily sensations, which forms a vicious circle that ends up in an attack.
A parallel line of reasoning is seen in Beck and Emery’s (1985) model of anxiety in which an “emergency response system” is activated by the organism’s perception of danger. The system is evolved to survive in the face of actual physical danger by preparing the organism for aggression or escape (fight, flight) or inhibiting it from sudden movement (faint, freeze). But, this system may itself alarm the individual by generating disturbing body sensations and cognitive dysfunctions that may be perceived as signs that the person is not out of danger. Thus, he starts to catastrophize: “This cannot be simply an emotional upset. I’m having a heart attack (stroke, ruptured intestine)”; “I’m going crazy (lapse into coma)”; or “I will be driven to bizarre behavior (suicide, ruptured intestine)”; “I’m going crazy (lapse into coma)”; “I’m coming apart”; “I feel I’m loosing consciousness even though it is very rare”; “I feel I am really here”; “I feel different”; “I feel I am real to pass out”; “I’m coming apart”; “I feel I’m loosing my grip”; “This is the worst experience I could imagine” shows how confused, disoriented and helpless the patient may feel. Perhaps the most frightening aspect of the panic attack is the feeling of out of control. The patient has to struggle to retain control over focusing, concentration, attention and action. Sometimes the out of focus feeling is so intense that the patient feels like he is loosing consciousness even though it is very rare that there is an actual loss of consciousness. Often the patient is overwhelmed by thoughts of dying. The fear of dying may be activated by unexpected physical sensation for there seems to be no explanation. So, the patient interprets the physical stress as a sign of physical disorder and becomes more anxious and therefore more symptomatic; and a chain reaction forms.

“My breathing starts getting very shallow. I feel I’m going to stop breathing. The air feels like it gets thinner. I feel the air is not coming up through my nose. I take short rapid breaths. Then I see an image of myself gasping for air. I think that I will start gasping. I get very dizzy and disoriented. I cannot sit or stand still. I start pacing. Then I start shaking and sweating. I feel I’m loosing my mind and I will flip out and hurt myself or someone else. My heart starts beating fast and I start getting pains in my chest. My chest tightens up, I become very frightened. I get afraid that these feelings will not go away. Then I get really upset. I feel no one will be able to help me. I get very frightened I will die. I want to run to some safe place but I don’t know where” (Beck and Emery 1985).

Not only are affective and cognitive symptoms more intense, but the person experiences additional symptoms, such as change in perceptions of the self and the outside world (depersonalization and derealization) and an inhibition of cognitive functions relevant to reasoning, recall and perspective-taking.

This vicious circle contains three basic elements: emotional reactions, bodily sensations and negative thoughts about sensations (misinterpretation). These elements are linked in a sequence following a particular pattern which can begin with any of the elements but always follows the same circular sequence:

• sensations - thought - emotion - sensations - thought - emotion - sensations - thought

• An example provided by Wells (1999) shows the panic circle derived from a panic patient as:

- felt unreal (sensation) - what if I panic? (thought) - scared/anxious (emotion) - shaking/heart racing/breathless/unreality (sensation) - I am having a heart attack (thought).

We see the same circularity in another patient:

increase in heart rate (sensation) - here it goes again (thought) - worry (emotion) - increase and difficulty in breathing (sensation) - I am getting worse! (thought) - fear, concern (emotion) - hot flashes and sweating (sensation) - I am loosing it! I am out of control! (thought) - crying, fear (emotion) - arms and legs become numb and rubbery (sensation) - I am going to faint for sure (thought) - vigilance (emotion) - chest becomes tight (sensation) - thoughts of blacking out/dying (thought) - petrified (emotion) (Dattilio and Berchick 1992).

Further phrases from panic patients such as; “I don’t feel I am really here”; “I feel different”; “I feel I am ready to pass out”; “I’m coming apart”; “I feel I’m loosing my grip”; “This is the worst experience I could imagine” shows how confused, disoriented and helpless the patient may feel. Perhaps the most frightening aspect of the panic attack is the feeling of out of control. The patient has to struggle to retain control over focusing, concentration, attention and action. Sometimes the out of focus feeling is so intense that the patient feels like he is losing consciousness even though it is very rare that there is an actual loss of consciousness. Often the patient is overwhelmed by thoughts of dying. The fear of dying may be activated by unexpected physical sensation for there seems to be no explanation. So, the patient interprets the physical stress as a sign of physical disorder and becomes more anxious and therefore more symptomatic; and a chain reaction forms.

Once panic attacks have occurred at least three other factors contribute to the maintenance of the problem:

1. Selective attention to the bodily events: Since they are frightened of certain sensations, patients become hypervigilant and repeatedly scan their body. This internal focus of attention allows them to notice sensations which many other people would not be aware of. Once noticed, these sensations are taken as future evidence of the presence of some serious physical or mental disorder.

2. Safety behaviors: Patient engages in certain behaviors such as holding onto something in order not to collapse. These safety behaviors tend to maintain patients’ negative interpretations (Salkovskis 1991).
These responses prevent disconfirmation of belief in catastrophe and can intensify bodily sensations.

3) Avoidance: Patient who avoids exercise because he believes he has a cardiac disease believes that this avoidance helps preventing the occurrence of a heart attack. However, as he has no cardiac disease, the real effect of this avoidance would be to prevent him from learning that the symptoms he is experiencing are harmless.

COGNITIVE BEHAVIOR THERAPY (CBT) in TREATMENT of PANIC DISORDER

There are three main treatment approaches to panic disorder such as cognitive-behavioral, psychodynamic, and pharmacological. Efficacy of time-limited cognitive behavioral and medication treatments has been demonstrated in many studies (Busch and Milrod 1997).

Benzodiazepines, beta blockers, and tricyclic antidepressants are the most frequently used alternatives to cognitive-behavioral treatment. Short term use of benzodiazepines may be helpful for managing an acute emotional crisis. One case series (Garakan et al. 1984) suggests that imipramine may reduce the frequency of panic attacks in patients suffering from panic disorder.

In Panic Focused Psychodynamic Psychotherapy (PFPP) therapist go on to explore the meaning and unconscious significance of the patient's panic experiences and fantasies after the patients is reassured that the frightening physical sensations are not signs of serious underlying illness. PFPP is divided into three phases aimed at a) relief of panic symptoms, b) reducing vulnerability to panic relapse and c) functional impairment. In the first phase the goal of intervention is to explore and review panic symptoms. In the second phase the goal is reduction of panic vulnerability through further exploration of core conflicts and dynamism associated with panic. In the third phase which is the termination, panic patients' difficulties with separation and anger are addressed directly in the relationship with therapist as they are experiencing in the context of terminating the treatment (Busch and Milrod 1997).

Certain controlled trials have investigated full cognitive therapy for panic disorder. Beck et al. (1992) allocated panic patients to 12 weeks of cognitive therapy or 8 weeks of supportive therapy. Assessments at 4 and 8 weeks showed that patients given cognitive therapy had improved significantly more than those given supportive therapy. In addition, the gains achieved in treatment were maintained at one-year follow-up. Clark et al. (1994) compared cognitive therapy with an alternative psychological treatment and with a pharmacological intervention. Panic disorder patients were randomly allocated to cognitive therapy, applied relaxation, imipramine (mean 233 mg/day), or a 3-month wait followed by allocation to treatment. Comparisons with waiting list controls showed all three treatments were effective. Comparisons between treatments showed that at 3 months, cognitive therapy was superior to both applied relaxation and imipramine. Between 3 and 6 months imipramine-treated patients continued to improve while those who had received cognitive therapy or applied relaxation showed little change. As a consequence, at 6 months cognitive therapy did not differ from imipramine and both were superior to applied relaxation. Imipramine was gradually withdrawn after the 6-months assessment. Between 6 and 15 months, 40% of imipramine patients relapsed compared with only 5% of cognitive therapy patients. At 15 months cognitive therapy was again superior to both applied relaxation and imipramine (Clark 1997).

CBT for panic disorder involves both cognitive and behavioral techniques. These techniques aim to help patients identify and modify their distorted, dysfunctional thoughts and beliefs that are anxiety-related and anxiety-promoting. The patient is "socialized" to the idea that thoughts and beliefs can be contributing to the panic attacks and anxiety is tried to be "normalized" (Greenberg 1995). Reversal of the maintaining factors of the disorder (selective attention to bodily events, safety behaviors and avoidance) is especially emphasized in CBT.

Assessment plays an important role in the beginning of the CBT for panic disorder. Summary of topics to be covered in assessment interview is clearly presented by Clark (1995).

A. Brief description of the presenting problem(s)
   For each problem:
   1. Detailed description of a recent occasion when problem occurred/was at its most marked
      a) Situation
      b) Bodily reaction
      c) Cognitions
      d) Behavior
   2. List of situations problem is most likely to occur/be most severe
   3. Avoidance (situations and activities, active and passive)
   4. Modulators (things making it better or worse)
   5. Attitudes and behavior of others
   6. Beliefs about causes of problem(s)
   7. Behavioral experiments (where appropriate)
   8. Onset and course
B. Medication (prescribed and non-prescribed)
C. Previous treatment (types, whether successful)
D. Personal strengths and assets
E. Social and financial circumstances

According to Clark, it is not always possible to obtain from the assessment interview all the information needed for a cognitive-behavioral formulation. Sometimes it is necessary to follow up the interview with homework assignments in which the patient is asked to collect more information which will clarify the formulation. For example, if it is unclear whether symptoms vary with time of day and the situation that patients are in, they may be asked to keep a diary recording what they are doing and how anxious (0-10 point scale) they feel each hour.

Following the assessment interview the components required in CBT can be stated as the following:
1. Detailed examination of recent experiences of panic, in order to be able to study the links in the vicious circle of panic.
2. Identifying the triggers for panic attacks.
3. Changing the catastrophic misinterpretations of bodily sensations by examining the true causes and consequences of the symptoms of panic attacks or panic-like symptoms, using cognitive procedures - mostly verbal discussion - and behavioral experiments.
4. Working with images, where verbal techniques appear inadequate on their own.
5. Overcoming avoidance and safety behaviors.
6. Removing any other psychological blocks to progress.
   1. Recent experiences of panic and vicious circle: Treatment starts by asking patient to describe a recent panic attack and identify the main sensations, negative thoughts and beliefs associated with these sensations. Through careful questioning, an “idiosyncratic version” (Clark 1997) of the panic vicious circle is obtained and shared with the patient. This procedure is also known as “socialization” (Wells 1999). Wells suggests treatment of patient’s negative thoughts as hypotheses and patient and therapist working together to collect evidence to determine whether these hypotheses are accurate or helpful. Instead of providing all the answers to patients’ negative thoughts, therapists ask a series of questions and design a series of behavioral assignments which aim to help patients to evaluate and provide their own answers to their thoughts. Once patient and therapist agree that the panic attacks involve an interaction between bodily sensations and negative thoughts about the sensations, a variety of procedures are used to help patients challenge their misinterpretations of the sensations.
   2. Identifying the triggers for an attack: Panic patients interpret the nature of some of their attacks as an indication of a cardiac or other psychical abnormality. Diaries and in-session discussions can be helpful for these patients to identify the actual triggers for their attacks. These procedures usually reveal that the trigger for their unexpected attacks is a slight bodily change caused by a different emotional state (excitement, anger, disgust) or by some innocuous event, such as rapid circadic eye movement (world seems to move), exercise (breathlessness, palpitations), suddenly standing up after sitting (dizziness) or drinking too much coffee (palpitations) (Clark 1997).
3. Changing the catastrophic misinterpretations using cognitive procedures and behavioral experiments:
   a) Cognitive procedures:
      a.1) Identifying the negative thoughts: One of the most useful cognitive procedures involves helping patients to understand significance of past events which are inconsistent with their negative beliefs. For example a patient who is thinking he or she is having a heart attack due to palpitations and chest pain may have gone to hospital. Going to the hospital helps the patient ease his/her negative thoughts and as a consequence the physical symptoms and panic ceases. Asking the patient whether going to the hospital is a good treatment for heart attacks and if it is not stopping a heart attack what it is doing can be used to help the patient see the significance of this event.
      a.2) Education: Educating the patient about what he or she is going through is also important. For example working with a patient who is concerned about fainting in an attack, therapist can educate by telling that blood pressure increases during a panic and fainting is associated with a drop in blood pressure. Similarly it helps a patient who believes he or she is having a heart attack due to a chest pain to tell that the pain felt during myocardial infarctions or angina pectoris is much more intense and different than the left-sided pain that panic attack patients feel.
      a.3) Distraction: Distraction techniques such as: focusing on an object, sensory awareness (focusing on surroundings as a whole, using sight, hearing, taste, touch, and smell), mental exercises (e.g. counting backwards form 1000 in 7’s), thinking of pleasant moments and fantasies, absorbing activities (e.g. crosswords, puzzles etc.) can be used as immediate symptom management strategies. According to Clark (1997) later in therapy, distraction can be a useful symptom-management technique in situations where it is not possible to challenge automatic thoughts. Distraction verifies the cognitive model of panic disorder. For example, when patients feel anxious during a session, they can be instructed to count backwards or describe out loud the content of the room. This often reduces anxiety. Through further questioning patients can be encouraged to see that this is because they were distracted from their thoughts suggesting that thoughts play an important role in the maintenance of their symptoms.
      a.4) Verbal challenging of automatic thoughts: Questioning can be used to help patients to evaluate their catastrophic misinterpretations and to substitute more realistic interpretations. This questioning can be done collaboratively between patient and therapist during sessions. It is best to assign to the patient as homework to put into practice these questioning skills they have learned in the sessions by recording and challenging automatic thoughts as they occur during a panic episode. Panic diary is a convenient way to do this. In a panic diary, patient records:
         a. Description of the situation where panic occurred
         b. Symptoms and their severity
         c. Panic frequency
         d. Main body sensations
         e. Negative interpretation (rating the belief on a 0-100 point scale)
         f. Rational response (re-rating belief in negative interpretation on a 0-100 point scale)
Clark (1997) provides examples to some of the qu-
questions which are particularly useful for examining and testing the reality of negative automatic thoughts associated with PD. These are:
1. What evidence do I have for this thought? Is there any alternative way of looking at the situation? Is there any alternative explanation?
2. How would someone else think about the situation?
3. What if it happens?
4. Are you forgetting relevant facts or over-focusing on irrelevant facts?
5. Are you over-estimating how likely an event is?
6. Are you underestimating what you can do to deal with the problem/situation?

b) Behavioral experiments:
Cognitive approach can be helpful in creating alternative, non-catastrophic interpretation. However, sometimes patients believe that a rational /alternative interpretation is valid only if its validity can be demonstrated. This is accomplished during CBT sessions through behavioral experiments where patients' symptoms are reproduced and/or reduced. Many of the behavioral experiments used in the treatment of panic involve the active induction of panic sensations in order to challenge belief in misinterpretations. These experiments produce sensations closely resembling to the sensations which are normally misinterpreted during panic attacks. Therefore, according to Wells (1999), so-called "panic inductions" are the cornerstones of behavioral reattribution experiments in this disorder. It is suggested by Wells that they work best when accompanied by the rational of the idiosyncratic panic experiences of the patient collaboratively produced by patient and therapist. These experiments are:

b.1) Hyperventilation: This is the most frequently used experiment since it is effective in producing wide range of sensations felt during an attack; that is why it is useful for challenging beliefs in misinterpretations of symptoms. It induces sensations of dizziness, hot flushes, palpitations, dissociation, visual changes, and breathlessness. During the test patients are asked to breathe in deeply and quickly through their nose and mouth and then fully empty their lungs in breathing out for about 2 minutes - it should be stated specifically that patient is free to stop when necessary. To be felt sensations are not told to the patients prior to the experiment in order to prevent expectancies. Once the experiment is over patients are asked to describe the sensations they are having and encourage them to see the similarities of these sensations to the ones felt during an attack and let them be free to point out differences if there is any. Once patients agree with the therapist that hyperventilation plays a role in panic, they can be trained in controlling their breathing as a part of the treatment. Therapist can be a model in describing controlled breathing or specially designed pacing tapes -where therapist instructs the patient to breathe in and out at a certain pace- can be issued to the patients to practice their breathing at home until they can control their breathing themselves. Clark (1995) suggests careful administration of this experiment since strenuous hyperventilation is medically contraindicated in patients who are pregnant or suffer from cardiac disease, emphysema, epilepsy, or severe asthma. Working with these kinds of patients, therapist can demonstrate the role of hyperventilation by practicing in front them.

b.2) Body focus task: This is a different demonstration of the effect of 'thinking' or more specifically the effect of selective attention on symptom perception can be achieved with self-focused attention manipulations. Purpose of this task is to show that attention plays an important role and can increase awareness of bodily sensations which are normally present but not noticed before, and that it can exaggerate perceived symptom intensity (Wells 1999). In this experiment patients are encouraged to divert their attention to sensations in specific parts of the body -especially the extremes such as fingertips, feet etc. Couple minutes of body focus task is followed by questioning patients about what they noticed. During reporting it is better if the therapist frames these observations by questioning them. Following questions can be good examples:
1. Were you aware of these sensations before you focused on your body?
2. What happened to those sensations when you focused?
3. Is there any parallel between what you experienced now and what you experience during an attack? If not what is the difference? If yes, how do you interpret this?
4. If this task increases your awareness how do you think this might contribute to our vicious circle model that we discuss?

Wells suggests another variant of the self/body-focus task where the patient is asked to visually fixate on parts of the body, such as staring at the back of one’s hand and noticing what happens to perception, such as perception of size, clearness of the image, and extent to which the hand seems part of the individual. Here the patient is again helped to realize that self-monitoring can exaggerate feared responses such as distortions in perception of size and feelings of unreality.

b.3) The paired associates task: This task (Clark et al. 1988) also shows the role of thinking on the cause of panic attack. Aim is to help patients realize that thinking about physical catastrophes can elicit or heighten bodily sensations and/or anxiety. The rationale of the task is not explained to the patient when the task is administered in order to eliminate their anxious expectations since this can interfere with the aim of this procedure. The patient is presented with anxiety provoking word pairs (e.g. breathlessness-suffocation, dizziness-fainting, chest pain-heart attack, numbness-stroke etc.) and are asked to concentrate on them while reading them out loud and thinking about their meanings. After reading the pairs, patients are asked to report observations. This task invokes anxiety
and/or heightens the present anxiety; sometimes awareness of bodily sensations also occurs. If the patient experiences these he/she asked the significance of this task regarding their thinking system.

**Other symptom induction tasks can briefly be summarized as:**

- Physical exercise task (patients are asked to engage in the avoided strenuous activity such as jogging, walking quickly up and down steps and so on to emphasize particular symptoms like speeded heart rate and sweating).

- Chest pain task (patient is asked to completely fill their lungs with air and then breathe out without letting all of the air out; patients can be educated that chest sensation in panic patients is usually attributed to muscular rather than cardiac origin).

  **b.4) Relaxation technique:** This is a technique to show that patients have control over their symptoms. Peveler and Johnston (1986) found that relaxation increases the accessibility of positive information in memory and hence makes it easier to find alternatives to panic related thoughts. This technique is also useful for patients who report difficulty to relax and being continually tense. A range of relaxation techniques are available but one of the most plausible types of relaxation training is the applied relaxation method devised by Ost (1987). The various stages in applied relaxation by Ost are outlined in the Appendix section to Clark (1995). Technique can be applied within sessions as well as through audio tapes for the patients to practice outside the treatment sessions. Contrary to other behavioral experiments, before the administration of this technique therapist should be extremely careful about warning their patients about the possibility of experiencing unusual sensations when at first practicing relaxation since focusing on their body can lead them to notice sensations which they can misinterpret.

  **4. Working with images:** Panic patients frequently report having images of catastrophic outcomes of panic. These outcomes can be fainting, dying or going mad etc. These images can be treated as negative thoughts and dealt with using discussion and behavioral experiments but Hackman (1999) suggests that it is more economical of time and more effective to use imagery techniques instead to change the meaning of the image. Through this technique feared image can be directly modified by transforming it into a less threatening and more realistic image. These images are usually frozen in time and therefore they tend to be ceased right at the very worst moment. Encouraging the patient to visualize what can happen next in real life in other words “finishing out” the image helps patient to de-catastrophe the catastrophe. For example, as Clark states, a patient who sees herself collapsed on the floor after fainting can be encouraged to visualize slowly coming round, getting to her feet and leaving.

  **5. Overcoming avoidance and safety behaviors:** Avoidance and safety behaviors are the major maintaining factors of panic disorder. Avoiding situations and places and engaging in certain safety behaviors such as those mentioned in the section above prevent patients to cease thinking negatively since they can’t experience the alternatives where they would be able to see that expected catastrophes do not occur even though they don’t engage in these activities. Therefore, it is important that the therapist encourage patients to go into situations or to engage in activities which they have previously avoided in order to see whether the things they are afraid of actually occur (e.g. encouraging a patient who avoids exercising due to a possible heart attack to run or walk briskly will help him/her to realize that exercising does not cause a heart attack but simply increases heart rate). Patients are asked to expose themselves to these situations repeatedly and in a graded fashion. In the same manner, it is also necessary in CBT of PD to encourage patients to modify and/or drop their behaviors which they use once symptoms start and therefore maintain their negative beliefs (e.g. if a patient carrying a bottle of water due to his/her concern of fainting is encouraged to drop this habit, this will help him/her to see that he/she is not fainting even though he/she is not carrying the bottle).

  **6. Removal of other blocks:** Sometimes patients do not want to let go of the illness since this is their way of coping with life or their way of benefiting from the secondary gains the disorder provides. For example a neglected housewife would use her illness to receive attention from her husband and others. Some superstitious beliefs can also play a role where the patient believes that trying to get better is a mean of provocation (Hackman 1999). Or, by getting better patients may fear that they may be blamed by others for reasons of not getting better earlier. These kinds of reasons should also be raised to awareness of the patient and each should be dealt and worked on specifically by the therapist and the patient.

  **7. Prevention of relapse:** Towards termination focus should be shifted from symptom reduction to preventing relapse. First of all the frequency of sessions should be decreased to monitor how the patient does outside and deals with any possible attack. Another way is to ask the patients what they have learned through the treatment since sometimes the rationale still remains as not grasped completely. If so, patient and therapist should go over the missing parts. Hackman (1999) states that cognitive model predicts that residual belief in misinterpretations constitutes a vulnerability to future anxiety and panic so, belief level should be checked and remaining beliefs should be modified before the end of treatment. Combinations of verbal and behavioral procedures outlined previously can be used in modification of these beliefs.

**CONCLUSION**

Pharmacotherapy is essential for moderate to serious cases of PD, especially when the high comorbidity rates with other psychiatric disorders like major depression are considered. But in “fresh” and/or mild cases, psychotherapy alone may help to overcome the problem. On the other hand, combined management
strategies including both pharmacological and psychotherapeutic interventions are more likely to be efficient than either modality alone, especially for patients with severe agoraphobia or who show an incomplete response (Gorman and Shear 2002, Foa et al. 2002). This, in turn, stresses the importance of multidimensional psychosocial approach and the team work of psychiatrists and psychologists when necessary (Spiegel and Hofmann 2002). The results of a controlled study suggests that psychotherapists make a contribution to outcome in CBT for PD, even when patients are relatively uniform, treatment is structured, and outcome is positive (Huppert et al. 2001).

CBT is an effective psychological treatment for PD. The overall idea in this model of treatment is that reduction/elimination of the catastrophic cognitions should be followed by reduction in fear and panic (Rachman 1996). Indeed, there is evidence that there is a positive correlation between reduction of the negative cognitions during treatment and the maintenance of improvements (Clark et al. 1991, Rodriguez and Craske 1993, Margraf and Schneider 1991). There are further examples supporting the efficacy of CBT. In two case series by Clark et al. (1985) and Salkovskis et al. (1986a) a stable baseline was established before the start of treatment and significant improvements from that baseline were observed in a shorter period of time than the baseline itself. Beck (1988) investigated the effectiveness of a form of cognitive therapy in PD patients. These patients improved significantly more than patients given a form of non-directive supportive psychotherapy. Barlow et al. (1984) found that PD patients given cognitive treatment plus relaxation and EMG (electromyogram) biofeedback improved significantly more than waiting list controls. Ost (1988) found that panic patients given applied relaxation improved significantly (Clark 1995). These results have encouraged researchers to investigate whether it might be possible to obtain similar results with a briefer form of the treatment. Black et al. (1993) devised their own brief (8 sessions) version of cognitive therapy. Later, Clark et al. (1995) have reported a more successful attempt to produce a brief version of CBT treatment. The total number of sessions was reduced to seven by devising a series of self-study modules. Patients completed the homework outlined in the modules before discussing an area with their therapist. Finally, PD patients were randomly allocated to brief cognitive therapy, full cognitive therapy, or waiting list. Brief and full cognitive therapies were both superior to no treatment and did not differ from each other (Clark 1997). Nagida et al. (2003) searched for follow-up studies of PD using CBT. Of the 78 citations produced in the initial search, most had major methodological flaws, including ignoring losses to follow-up, not accounting for interval treatment, and unclear reporting. Three papers met strict methodological criteria, and two of these demonstrated a modest protective effect of CBT on panic disorder patients. Consistent with previous reports, Heldt et al. (2003) found that CBT was effective for treatment-resistant patients. Among these patients, depression as well as neurotic defense style was associated with a poorer outcome.

Treatment resistance remains a relatively common problem in PD despite the success of the selective serotonin reuptake inhibitors (SSRIs) and CBT as first-line agents. Factors contributing to medication treatment resistance include inadequacy of trial duration, improper dosage, poor tolerability, noncompliance, and medical and psychiatric comorbidity. Poor tolerability to the SSRIs can frequently be addressed by switching to lowering of the initial dose, with a gradual upward titration. For patients who have not responded to one or more adequate trials of SSRIs, options include combination treatment with a benzodiazepine or tricyclic antidepressant (TCA), augmentation with pindolol, or switching to a different class of medication. The newer antidepressants, particularly venlafaxine XR, seem promising as alternatives, and might be beneficial for the refractory patient with a comorbid mood disorder. Anticonvulsants and olanzapine might be particularly beneficial for the refractory patient with hypomania, irritability, and insomnia, who also has demonstrated SSRI hypersensitivity. Experimental therapeutics in refractory panic probably will continue to examine the role of corticotropin releasing factor and glutamate/GABA systems. The role of CBT in the medication refractory patient has been explored, with preliminary suggestions of efficacy and was found to be effective (Mathew et al. 2001). Benzodiazepines (BZs) are commonly used in conjunction with CBT in the treatment of PD. Agoraphobia. However, empirical evidence provides little support for the utility of this combined treatment approach over CBT alone. Among various BZ parameters (chronicity, frequency, dose, and frequency of parenteral use), pm use of BZs for coping with anxiety symptoms was a significant negative predictor of degree of change in both anxiety sensitivity and anxious arousal from pre- to post-CBT. Although no significant between-group differences were evident in pre-treatment symptomatology, unmedicated subjects demonstrated the most positive overall CBT outcome, while pm BZ users evidenced the fewest gains (Westra et al. 2002). Additionally, CBT may be helpful in PD patients who suffer from unpleasant experiences of BZ withdrawal (Otto et al. 2002). CBT has also been shown to reduce risk for adverse reactions following antidepressant of any class, including the SSRI’s tapering period for patients with PD (Whittal et al. 2001, Schmidt et al. 2002).

When all the data is considered, every clinician (GPs, family doctors, medical doctors from other specialties and, of course, psychiatrists) involved in the management of PD patients should be aware and capable of applying CBT.

REFERENCES
Barlow DH, Cohen AS, Waddell MT, Vermilyea BB, Di Nardo PA


