CHAPTER 5: Stress and Physical and Mental Health

Chapter Overview/Summary

Health psychology is the sub discipline of the field of psychology that focuses on the effects of stress and other psychological factors in the development and maintenance of physical health problems. Behavioral medicine is an approach to physical illness that is concerned with how psychological factors cause physical health problems. Stress is an inevitable part of life; all situations, positive and negative, can be stressful. Stressors can be placed into one of three categories: frustrations, conflicts, and pressures. A person’s response to stressful situations depends not only on the severity of the stressor but also on the person’s perceptions, preexisting stress vulnerabilities, and amount of external resources and social supports. Conflict situations can be characterized as approach-avoidance, double-approach, or double-avoidance. People’s stress responses can be viewed as task-oriented or defense-oriented. Among the consequences of extreme or prolonged stress can be extensive physical and psychological problems.

When we are stressed, the autonomic nervous system responds in a variety of ways. One consequence of stress is increased production of cortisol. High levels of this stress hormone may be beneficial in the short term but problematic if the levels remain high over the longer term. In the immune system, specialized white blood cells called B-cells and T-cells work together to respond to antigens such as viruses and bacteria. T-cells are assisted by macrophages.

Psychoneuroimmunology, an exciting and developing new field, is concerned with the interactions between the nervous system, the immune system, and behavior. Cytokines are chemical messengers that allow the brain and the immune system to communicate with each other. Some cytokines respond to a challenge to the immune system by causing an inflammatory response. Other cytokines, called anti-inflammatory cytokines, dampen the response the immune system makes when it is challenged.

Negative emotional states, such as being under stress or having low social support, can impair the functioning of the immune system and the cardiovascular system, leaving a person more vulnerable to disease and infection. Damaging habits and lifestyles, such as smoking or lack of exercise, also enhance risk for physical disease. Many physical illnesses seem to be linked to chronic negative emotions such as anger, anxiety, and depression. Hostility is well established as an independent risk factor for CHD. The same is true of depression.

When assessing the treatment methods for stress-related disorders, you can look at serious medical treatments as well as psychological interventions such as emotional disclosure, biofeedback, relaxation and meditation, and cognitive-behavioral therapy. Factors such as genetic vulnerabilities and excessive autonomic reactivity remain important in our understanding of the causes of physical diseases. They must also be a part of treatment considerations whenever physical disease occurs, regardless of strong evidence of psychological contributions to its development. A common factor in much psychosocially mediated physical disease is inadequacy in an individual’s coping resources for managing stressful life circumstances. Cognitive-behavior therapy, in particular, shows much promise in alleviating this type of health-endangering problem.

Adjustment disorders can be caused by relatively common life events, such as unemployment, loss of a loved one through death, or marital separation or divorce. PTSD is the response to more severe trauma or excessively stressful situations such as rape, military combat, imprisonment, being held hostage, forced relocation, or torture.

PTSD may include such symptoms as intrusive thoughts and repetitive nightmares about the event, intense anxiety, avoidance of stimuli associated with the trauma, negative changes in thoughts and mood, and increased arousal manifested as chronic tension, irritability, insomnia, impaired concentration and memory, and reckless behavior. When PTSD symptoms occur within six months of the traumatic event, the diagnosis is acute stress disorder; if symptoms are delayed by six months or more after the traumatic event, the diagnosis is classified as delayed PTSD, a diagnosis that is more difficult to make and that is more controversial.
Many factors contribute to breakdown under excessive stress, including the intensity or harshness of the stressful situation, the length of the traumatic event, the person’s biological makeup and personality adjustment prior to the stressful situation, and the ways in which the person manages once the stressful situation is over. In many cases, symptoms remit with the removal of the stressor, especially with the help of psychotherapy. In extreme cases, there may be residual damage or symptom-onset itself may be delayed until well after the trauma is over.

Among the most important treatments for PTSD are the following: prevention by reducing the frequency of traumatic events; prevention of maladaptive responses to stress by preparing people in advance; stress-inoculation training; telephone hotlines; crisis intervention; psychological debriefing; medication and cognitive-behavioral treatments.

Detailed Outline

I. What Is Stress?
   A. **Stressors** are external demands
      a. Stress is the effect caused by stressors
      b. Efforts to deal with **stress**, which are the effects created in an organism, are **coping strategies**—the efforts to deal with the stress
      1. All situations, positive and negative, that require adjustment can lead to stress.
      2. Hans Selye—stress can be positive (eustress) or negative (distress)
   B. **Stress and the DSM**
      1. Role of stressors in symptom development is formally emphasized in the *DSM-5* on Axis IV
      2. Axis I disorders implicated in stress are adjustment disorder, acute stress disorder, and PTSD
   C. **Factors Predisposing a Person to Stress**
      1. The individual’s stress tolerance
         a. People vary greatly in overall vulnerability to stressors.
         b. Children are particularly vulnerable.
         c. **Stress tolerance** refers to a person’s ability to withstand stress without becoming severely impaired.
         d. Early traumatic experiences can increase or decrease future vulnerability.
         e. Recently, the 5HT-TLPR gene has been indicated as partially responsible for stress response.
      2. The experience of crisis
         a. When a stressful situation exceeds the adaptive capacities of a person or group
   D. **Characteristics of Stressors**
      1. Nature of the stressor
         a. The impact of the stressor depends upon importance, duration, cumulative effect, multiplicity, and imminence
         b. Traumatic events influence those closest to the situation
      2. The experience of crisis
         a. Crisis occurs when stressful situations approach or exceed adaptive capacities
         b. Crisis intervention—providing psychological help in times of severe and special stress—may allow person to emerge from crisis stronger than before
      3. Life changes
         a. Even positive life changes place demands on us and thus may be stressful
         b. Holmes and Rahe, 1967—Social Readjustment Rating Scale
         c. Horowitz, Wilner, & Alvarez, 1979—Impact of Events Scale
      4. Personal growth in the face of tragedy
         a. Being able to perceive some benefit from a disaster (e.g., being closer to your family), moderates the effect of trauma and appears to be adaptive.
E. Measuring life stress
1. Social Readjustment Rating Scale assesses the measurement of life stress

F. Resilience
1. The healthy psychological and physical functioning after a potentially traumatic event
2. Same events are interpreted differently by people.
3. Stress is different depending upon how competent a person feels to handle the stressor.
4. Unanticipated stressors may place a person under severe stress.
5. Realistic expectations for stressful events helps.
6. Being able to perceive some benefit from a stressor (the silver lining) may moderate the effects of a trauma.
7. High levels of optimism, high self-esteem, good social support, and greater self-control are all positively correlated with resilience. These traits and coping styles may be heritable.

II. Stress and the Stress Response
A. The stress response system
1. Stress response involves a cascade of biological changes
2. Sympathetic adrenomedullary (SAM) system is designed to mobilize resources and prepare for a fight-or-flight response
3. Stress response begins in the hypothalamus, stimulating the SNS, the hypothalamus-pituitary-adrenal (HPA) system (see figure 5.1). This causes the adrenal glands to secrete adrenalin and noradrenalin increasing heart rate. Hypothalamus also releases a corticotrophin-releasing hormone that stimulates the pituitary gland. The pituitary secretes ACTH, which induces the adrenal cortex to produce glucocorticoids, specifically cortisol.
4. Cortisol prepares body for “fight or flight” and inhibits the immune response.
5. Cortisol, if not shut off, can damage cells in the hippocampus and stunt growth.

B. Biological Costs of Stress
1. Biological cost of adapting to stress is called the allostatic load.
2. Focus is not just on major stressors, but also on daily stressors.

C. The Mind–Body Connection
1. Psychoneuroimmunology—the study of the interaction between the nervous system and the immune system
2. Immunosuppression—when a person’s behavior and psychological state affect immune system functioning

D. Understanding the Immune System
1. Established link between stress and lowered immune system reactivity
2. Elements of the human immune system
   a. The immune system maintains bodily integrity and protects the body from viruses and infections.
   b. White blood cells (leukocytes or lymphocytes) are the core of the body’s defenses.
   c. There are two types of leukocytes: B-cells and T-cells.
   d. B-cells mature in the bone marrow and produce specific antibodies that respond to specific antigens. When an antigen is recognized, B-cells divide and produce antibodies that circulate in the blood.
   e. T-cells mature in the thymus and circulate through the blood and lymph glands in an inactive form. Each T-cell has specific receptors that recognize one type of antigen. T-cells become activated when macrophages detect antigens (foreign bodies such as viruses and bacteria) and start to engulf and digest them.
f. Macrophages release interleukin-1.
g. **Cytokines** are chemical messengers that appear to be crucial for health.

E. **The Importance of Cytokines**
1. Cytokines are small protein molecules that serve as chemical messengers and allow immune cells to communicate with each other
2. Interferon is an example of a cytokine given to patients with Hepatitis C
3. The play an important role in mediating the inflammatory and immune response
4. They are divided into main categories: proinflammatory cytokines and anti-inflammatory
5. Cytokines communicate with the immune system functioning and they also send signals to the brain, these cytokines can stimulate the HPA axis
6. Downstream effect which means that problem with the immune system may lead to some behavioral changes and psychiatric problems
7. Bruce and Peebles (1904) findings with white blood cells were abnormal in type and number for those individuals with mental illness living in a mental asylum

F. **Stress, Depression, and the Immune System**
1. Strong association found between dysphoric mood and compromised immune function
2. Depressed affect associated with lowered numbers of white cells following challenge by a foreign protein, with lowered natural killer cell activity, and with lowered quantities of several varieties of circulating white cells
3. Findings also true with: students undergoing final examinations. sleep deprivation, marathon running, space flight, being the caregiver for a patient with dementia, and death of a spouse
   a. Chronic stress and depression may trigger the production of proinflammatory cytokines such as interleukin-6
   b. Increases in interleukin-6 have been found to be associated with aging, certain cancers, cardiovascular disease, being overweight, smoking, and having a sedentary lifestyle
4. **Positive psychology** focuses on human traits and resources such as humor, gratitude, and compassion that might have direct implications for our physical and mental well-being

III. **Stress and Physical Health**
1. Optimism
   a. Hopelessness accelerates progression of atherosclerosis
   b. Optimism seems to serve as a buffer against disease
2. Negative affect
   a. Depression associated with measurable and undesirable changes in immune functioning, greater risk of having a heart attack, increased mortality from all causes, heighten the risk for osteoporosis, decline in muscle strength
   b. Anxiety has also been associated with development of coronary heart disease
   c. Chronic anger and hostility can be risk factors for coronary heart disease
3. Growing interest in studying positive psychology
   a. Laughter is associated with enhanced immune functioning
   b. Psychological benefits to forgiving people who have wronged us
   c. Placebo effect

IV. **Cardiovascular Disease**
A. Hypertension
1. **Hypertension** is defined as having a persistent systolic blood pressure of 140 or more and a diastolic blood pressure of 90 or higher. (see figure 2.3 for new standards)
2. **Essential hypertension** (no specific physical cause) is a risk factor for heart disease and stroke
3. **Hypertension and African Americans**
   a. Higher rates and more severe hypertension found among African Americans
   b. Factors may include: inner city living, economic disadvantage, exposure to violence, race-based discrimination, lifestyle factors (women more likely to be
overweight and both men and women less likely to exercise)
c. Biological reasons including excessive retention of ingested sodium, renin processed differently, nitric oxide produced in lower levels in the blood vessels, specific genes

B. Coronary Heart Disease (CHD)
1. Chief clinical manifestations are:
   a. Myocardial infarction
   b. Angina pectoris
   c. Disturbance of the heart’s electrical conduction

C. Risk and Causal Factors in Cardiovascular Disease
1. Chronic and acute stress
   a. Everyday stressors increase the risk of CHD and death
2. Personality
   a. The Type A behavior pattern (Friedman and Rosenman)
      (1) Characterized by
         (a) Excessive competitive drive
         (b) Extreme commitment to work
         (c) Impatient and time urgent
         (d) Hostility expressed in manner and speech
         (e) Not all components of Type A are equally predictive of heart disease. It has become clear that the hostility component including anger, contempt, scorn, cynicism, and mistrust is most closely associated with coronary heart disease.
   b. Recent development is the identification of the “distressed” or Type D personality (see Figure 5.5 for a chart of the characteristics of Type D)
      (1) Tendency to experience negative emotions and to feel insecure or anxious
      (2) Initial results indicate Type D is associated with coronary heart disease
3. Depression
   a. Those with heart disease are three times more likely to be depressed.
   b. Being depressed at the time of a heart attack or shortly afterward places a person at greater risk for future coronary events and death.
   c. Those who had suffered major depression were found to be four times more likely to have a heart attack.
   d. Evidence points to the importance of hopelessness and vital exhaustion (fatigue, irritability, and demoralization) as risk factors for CHD.
   e. Why should depression and CHD be linked?
      (1) Two mechanisms have been proposed:
         (a) Depressed people may engage in more behaviors known to put people at risk for CHD
         (b) Depression ay be linked to CHD through various biochemical mechanisms
4. Anxiety
   a. Association between phobic anxiety and increased risk for sudden cardiac death.
   b. No association was found between anxiety and nonfatal attacks.
5. Social isolation and lack of social support
   a. Those who have a relatively small social network or who consider themselves to have little emotional support are more likely to develop CHD
   b. For those who already have CHD, low social support predicts future cardiac events and death
   d. Chronic and acute stress
      (1) Some types of stress have a large subjective element; others appear universal (such as earthquakes)
      (2) Everyday forms of stress, such as workplace stress, can elevate risk for CHD
(3) Key factors for negative effects of stress in the workplace are highly demanding job and little control over decision making (see figure 5.6)

(4) Experiences of discrimination have been linked to a number of bad health outcomes, including increased blood pressure and signs of cardiovascular disease

(5) CRP is a protein synthesized in the liver and the researchers Lewis and colleagues found that there was an increase of CRP in African Americans that had experienced discrimination

(6) Emotion regulation-hostility, depression, and anxiety are all linked to CHD it is beneficial to be able to regulate one’s emotions

6. The importance of emotion regulation

V. Treatments of Stress-Related Physical Disorders
A. Biological Interventions
1. Begin with appropriate biological treatments
2. Patients treated with SSRIs were much less likely to die or have another heart attack

B. Psychological Interventions
1. Emotional disclosure
   a. “Opening up” and writing expressively about life problems in a systematic way does seem to be effective.
   b. Psychosocial interventions can decease depression, systolic blood pressure, heart rate, and cholesterol levels
2. Biofeedback
   a. Useful for treating headaches, muscular skeletal pain
   b. Effects tend to be small and could be obtained in simpler ways such as systematic relaxation training
3. Relaxation and meditation
   a. Effective for simple tension headaches and essential hypertension
   b. Increasing interest in meditation as a way to reduce blood pressure
4. Cognitive-behavioral therapy
   a. Effective for headache and other types of pain
   b. CBT techniques also used for stress management

VI. Stress and Mental Health
A. Adjustment Disorder
1. Diagnosed when response to a common stressor such as divorce or childbirth is maladaptive and occurs within 3 months of the stressor
2. Considered maladaptive if unable to function as usual or if reaction is excessive
3. Maladjustment will lessen when the stressor has subsided or the individual learns to adapt. If symptoms persist past 6 months, diagnosis will change
4. Mildest diagnosis a therapist can assign to a client
5. Adjustment disorder caused by unemployment
   a. Unemployment is particularly an issue for young minority males.
   b. Rates of unemployment for young black males is twice those for young white males.
6. Adjustment Disorder Caused by Divorce or Separation
   a. The loss of an intimate relationship is a potent stressor
   b. Major source of vulnerability to psychopathology
   c. The loss is a multifaceted event
   d. Readjustment to life has new demands and stresses
   e. Even when divorce is relatively agreeable, coping is necessary

VII. Posttraumatic Stress Disorder (PTSD)
A. Now grouped in a new diagnostic category of the DSM-5 called trauma- and stressor-related disorders with adjustment disorder (above) and acute stress disorder (below).
B. Changes in the PTSD criteria in DSM-5. In the DSM IV TR, the definition of PTSD was expanded to include the experience of the victim—not the event itself. This was first introduced as exposure to a traumatic event that was "outside the range of usual human experience" and that would cause "significant symptoms of distress in almost everyone."

1. One study found that 89.6% of its sample had been exposed to an event (typically death of a loved one) that would qualify them for PTSD.
2. Some argued that the overly broad definition lead to an increase in diagnosis and potential problems.
3. The DSM-5 tightened criteria by eliminating indirect and informational exposure and removed the requirement of how a person responds with intense fear, helplessness, or horror.

A. Acute Stress Disorder

1. A diagnostic category that can be used when symptoms develop shortly after experiencing a traumatic event and last for at least two days.
2. People with this disorder do not have to wait a whole month to be diagnosed with PTSD.
3. People can receive treatment as their symptoms begin.
   If the symptoms continue for longer than four weeks, symptoms can progress into PTSD.

B. Clinical Description

1. Traumatic event is re-experienced
2. Person has experienced a traumatic event
3. Response involved intense fear, helplessness, or horror
4. Recurrent distressing dreams
5. Avoidance of stimuli associated with stress
6. Increased tension/arousal, often accompanied by insomnia and sensitivity to noise
7. Impaired concentration and memory
8. Feelings of depression leading to social withdrawal
9. DSM-5 new proposed category which would move PTSD from anxiety disorders to a Trauma-and Stressor-Related Disorders, disorders that would be included is PTSD, ASD, and Adjustment disorder

C. Prevalence of PTSD in the General Population

1. National Comorbidity Survey-Replication suggests that the lifetime prevalence rate in the U.S. is 6.8% and that these rates are higher for women
2. Over the course of their lives, 9.7% of women and 3.6% of men will develop PTSD.
3. Original cases limited to war veterans and disaster victims.
4. U.S. National Comorbidity study estimates the rate at about 6.8% lifetime prevalence
5. Women tend to have more severe symptoms.
6. Women are more likely to be exposed to certain kinds of trauma like rape.

D. Rates of PTSD After Traumatic Experiences

1. Many people who experience car accidents with injury, extreme hurricanes, and violent crime suffer from PTSD even a year later.
2. More than 900 earthquakes with a magnitude between 5 and 8 on a Richter scale occur annually.
3. Tsunamis devastate coastal villages; tornadoes and floods destroy lives.
4. Shalev and Freedman (2005) found that PTSD rates were higher in those that survived a terrorist attack than those who had survived a bad car accident.
5. Rescue workers who respond to disasters or other traumatic events usually develop PTSD at the rate of 5 to 10%.
6. The trauma of military combat
   a. WWI traumatic reactions were termed "shell-shocked"—coined by Col. Frederick Mott
   b. Considered to be organic conditions produced by minor brain hemorrhages
   c. Resulted from the general combat situation—physical fatigue, constant threat of death or mutilation, and severe psychological shocks
   d. During WWII, traumatic reactions were known as operational fatigue and war neuroses
e. During Korean and Vietnam wars, this became known as combat fatigue or combat exhaustion and impacted 10% of troops
f. Figures were greater than officially reported—many soldiers received supportive therapy in their battalion and immediately returned to combat
g. The trauma of military combat produced the greatest loss of personnel during WWII
h. A study by the Department of Defense found that 92% of Army soldiers and Marines in Iraq report they have been attacked or ambushed and 86% report knowing someone who has been killed
i. Among Iraq and Afghanistan war veterans found that 21.8% received the diagnosis of PTSD and 17.4% were diagnosed with depression
j. A report evaluating Marines found that 17.1% of them reported symptoms of PTSD after deployment in Iraq or Afghanistan
k. 12% to 16% of veterans of Vietnam War developed PTSD
l. This data highlight the importance of mental health screenings prior to deployment
m. From 2005 to 2009, 1,100 members of the armed forces have committed suicide

6. Prisoners of war and Holocaust survivors
   a. Almost 40% of the American prisoners in Japanese POW camps during WWI died; even higher proportion of prisoners in Nazi concentration camps died
   b. Survivors of Nazi concentration camps sustained residual organic and psychological damage (anxiety, insomnia, headaches, irritability, depression, nightmares, impaired sexual potency, and functional diarrhea) along with lowered tolerance to any stress
   c. Survivors of POW camps showed impaired resistance to physical disease, low frustration tolerance, substance abuse, irritability, and emotional instability
   d. 50% of POWs were found to meet criteria of PTSD in the year following their release; nearly a third met PTSD criteria 40 to 50 years later
   e. Several studies have documented higher risk of death in those returning from war—even years later
   f. Some of these effects may be due to harsh treatment and malnutrition

7. Psychological trauma among victims of torture
   a. Intense suffering and lifelong dread may result from torture
   b. 38% of Burmese political dissidents who escaped to Thailand had been tortured before their escape
   c. Many studies have unrepresentative samples and cannot be generalized
   d. Recent study of African refugees from Somalia and Ethiopia was able to obtain a substantial representative sample:
      (1) 45% of men and 43% of women were tortured
      (2) 55% of Ethiopians and 36% of Somalians were tortured
   e. Psychological symptoms have been well documented, including night terrors, nightmares, depression, suspiciousness, social withdrawal and alienation, irritability, and aggressiveness
   f. Cognitive control (being able to predict and ready themselves for the pain) of situations reduces negative consequences

D. Causal Factors in Posttraumatic Stress Disorder
   1. Level of stress and personality variables account for development of PTSD—at high enough stress levels, almost everyone will develop symptoms
   2. PTSD is caused by experiencing trauma
   3. Double victimization, with victims of trauma also being stigmatized and being blamed for the troubles that they have
   4. Not everyone that is exposed to a traumatic event will develop PTSD
   5. The nature of the traumatic stressor and how directly it was experienced can account for much of the differences in stress response

E. Individual Risk Factors
1. Those who work with people undergoing traumatic events, such as police officers, soldier, firefighter, and aid workers, also are at high risk for developing symptoms.

2. Being male, having less than a college education, having conduct problems in childhood, having a family history of psychiatric disorders, and scoring high on measures of extroversion and neuroticism.

3. Rates of exposure to traumatic events are higher for African Americans than White counterparts.

4. Being female also puts an individual at a greater risk.

5. Prompt treatment following a traumatic event can prevent this conditioned fear from establishing itself and becoming resistant to change.

6. High IQ, high on measure of cognitive ability, and the ability to create meaning from the traumatic event all seem to act as buffers.

7. Biological factors:
   a. Women with PTSD have higher levels of cortisol than men.
   b. In combat veterans, males with PTSD have smaller hippocampuses (responsible for memory) than veterans without PTSD.
   c. MZ twin studies reveal that it is most likely hippocampal volume that may contribute to vulnerability.
   d. Cortisol tends to be lower in people with PTSD who have experienced physical or sexual abuse.
   e. Gene-environment interactions such as how people with a particular form of the gene 5HTTLPR or serotonin supporter transporter gene.

F. Sociocultural Factors
   1. Psychosocial factors:
      a. Reductions in personal freedom
      b. Frustrations
      c. Separation from home and loved ones
      d. Constant fear
      e. Prolonged harsh conditions
      f. Unpredictability
      g. Necessity of killing
      h. Personal immaturity—sometimes stemming from parental overprotection
      i. Past personality instability
   2. Sociocultural variables:
      a. Clarity and acceptability of war goals
      b. Identification with combat unit
      c. Esprit de corps—influence morale and adjustment to extreme circumstances
      d. Leadership quality
      e. Returning to an unaccepting social environment can increase a soldier’s vulnerability to post-traumatic stress.
      f. Families of returning soldiers can develop secondary traumatic stress responses
      g. Being a part of a minority group

G. Long-Term Effects of Posttraumatic Stress
   1. Symptoms may persist for a sustained period.
   2. Delayed PTSD somewhat controversial.
      a. Difficult to relate directly to combat stress as they may have had other adjustment problems
      b. Increased diagnosis may reflect increased popularity more than increased incidence

VIII. Prevention and Treatment of Stress Disorders

A. Prevention
   1. "Stress—inoculation training" using cognitive-behavioral techniques can be effective in cases where the person is facing a known traumatic event.
      a. Information provided about the stressful situation and ways people can cope
with dangers
b. Self-statements promoting effective adaptation are rehearsed
c. Person practices self-statements while being exposed to a variety of ego-threatening or pain-threatening stressors—allows person to practice the new coping skills.

2. Can’t prepare for most traumatic situations as they are unpredictable and uncontrollable.

B. Treatment for Stress Disorders
1. Telephone hotlines
2. Crisis Intervention

C. Psychological Debriefing
1. Short-term crisis therapy involving face-to-face discussion and an active therapist
2. Debriefing sessions—often controversial
2. Postdisaster debriefing sessions have increased over the past 20 years
3. Research has yet to identify the efficacy of this treatment. In fact, in some studies, people who received such treatment fared worse than controls.
4. Psychotropic medications
   a. Antidepressants may be helpful in alleviating symptoms of depression, intrusive thoughts, and avoidance
   b. Since symptoms fluctuate, medication needs to be closely monitored.
5. Cognitive-behavioral treatments
   a. Direct exposure therapy for continuing symptoms
   b. Behaviorally oriented techniques involving repeated or extended exposure, either in vivo or in the imagination, to objectively harmless but feared stimuli
   c. Relaxation training and assertiveness training may also be recommended
   d. Prolonged exposure—the patient is asked to vividly recall the traumatic event over and over until there is a decrease in his or her emotional response

C. Challenges in Studying Crisis Victims
1. Impossible to study scientifically as you cannot create an “awaiting disaster” study.

D. Trauma and Physical Health
1. In a study looking at HIV-positive people, childhood trauma was highly predictive of death.
2. A history of trauma predicts mortality rate.

IX. Unresolved Issues: Why is the study of trauma so contentious?
A. Individual risk factors and blaming the victim
B. Research on emotional topics: combat trauma and child sexual abuse
C. Advocacy vs. scientific findings
Key Terms

acute stress disorder
adjustment disorder
allostatic load
antigens
B-cell
behavioral medicine
coping strategies
correlational research study
cortisol
crisis
crisis intervention
cytokines
debriefing sessions
distress
essential hypertension
health psychology
hypertension
hypothalamic-pituitary-adrenal (HPA) system

immune system
immunosuppression
leukocytes
lymphocytes
positive psychology
posttraumatic stress disorder (PTSD)
prolonged exposure
psychoneuroimmunology
resilience
stress
stress-inoculation training
stress tolerance
stressors
sympathetic-adrenomedullary (SAM) system
T-cell
Type A behavior pattern
Type D personality