

TRAUMATIC STRESS AND POSTTRAUMATIC STRESS DISORDERS

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Part I -- Lecture Outline: "An Introduction to Traumatic Stress: Recognition and Prevention"

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Part II -- General Outline

I. Traumatic Stress (Trauma Response)

A. **Traumatic Events:** Trauma has been a part of the human experience since the dawn of mankind. In the words of Billy Joel, "We didn't start the fire. It was always burning since the world's been turning." War, devastation, famine and pestilence have occurred throughout human history. In today's world, traumatogenic phenomena are ubiquitous. Some of the universally accepted traumatic stressors are:

Accidents -- Motor Vehicle, Other

Disasters -- Man-made, Natural and Technological

**Violence -- Abuse(Physical, Sexual), Assault, Domestic Violence, Holocaust, Incest,
Torture & Being Held Hostage, Rape**

War

Witnessing someone being injured or killed

B. **Traumatic Stress (Trauma Response)** Although there are literary descriptions dating back to ancient times about the effect on the psyche of traumatic events, the scientific study of the human response to trauma only spans the 20th century and part of the 19th. In the 1980's the field of traumatology emerged as the investigation and the application of knowledge about the immediate and long-term psychosocial consequences of highly stressful events and the factors which effect these consequences. Within this field the validity of a response to trauma is universally accepted. A cardinal feature of this response is its biphasic nature which was first described by Janet (1889, 1909). Janet is also attributed with noting that dissociation is a key process in the reaction to overwhelming experiences and that traumatic memories are not synthesized but may be expressed as sensory perceptions, affect states or behavioral re-enactments. The trauma response is a dynamic concept in which there are alternating phases of intrusion (re-experiencing) and avoidance (psychic numbing) of the trauma. Freud (1939) observed, "The effects of trauma are of two kinds, positive and negative. The former are attempts to bring the trauma into operation once again - that is, to remember the forgotten experience, better still, to make it real, to experience a repetition of it anew . . ." [fixation to the trauma and compulsion to repeat] and "The negative reactions follow the opposite aim: that nothing of the forgotten trauma shall be remembered and nothing repeated." [defensive reactions]. Abram Kardiner (1941) also noted these symptoms of repetition, including "repetitive tics and ceremonials," and "inhibitory phenomena." In addition, he focused on the somatic and autonomic symptoms. Thus, he coined the term "physioneurosis" in order to describe the fact that the response to trauma is physiological as well as psychological. For Kardiner, who emphasized an adaptive point of view, an external, sudden, overwhelming event causes an abrupt change in the person's previous adaptation. Thus, the trauma response is a phenomenon of psychological and physiological adaptive changes necessary for mastery, restitution and the re-establishment of equilibrium. More recently, Horowitz (1978) has elaborated on the concept of the "stress response syndromes" and has developed multi-phasic models of a normal and a pathological stress response.

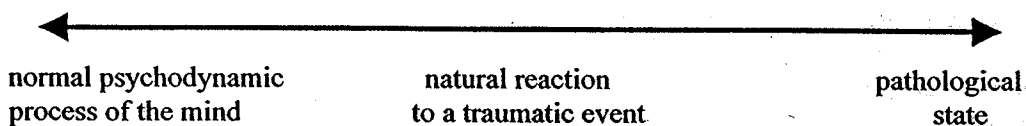
The concept of a stress response derives from the work of Hans Selye who originated the study of stress. Building upon Claude Bernard's concept of the internal milieu (all living beings maintain the constancy of their internal milieu) (1878) and Walter B. Cannon's concept of homeostasis (the body's tendency to maintain a steady state despite external change) (1929), Selye introduced the general adaptation syndrome (G.A.S.) (the manifestation of stress in the body which evolves in three stages - alarm reaction, stage of resistance, stage of exhaustion) (1936). Although the study of stress was a line of scientific investigation independent from the study of psychological trauma, it is interesting to note that Cannon's work on the general function of the autonomic nervous system was derived from his research of traumatic shock (physical wounds) during World War I and much of what we know about psychological trauma comes from the study of war's effect upon the psyche. Recently, there has been data demonstrating that the

hypothalamic-pituitary-adrenal axis functions differently in posttraumatic stress disorder compared to how it functions in stress. Therefore, one might argue that traumatic stress is either a different form of stress or not actually a stress disorder. .

1. Characteristics of the Trauma Response (Traumatic Stress)

- a. biphasic
- b. dynamic re-experiencing \longleftrightarrow avoidance
- c. positive features - re-experiencing; reliving; remembering; intrusiveness; repetitive thoughts, emotions, behaviors
- d. negative features - avoidance, numbness, detachment, denial, amnesia, forgetting, repression
- e. adaptive
- f. variety of emotions
- g. biopsychosociological components, e.g., physiologic - autonomic nervous system reactivity, importance of attribution and meaning, the response is modulated by social supports
- h. dissociative process

2. Functional Levels of the Trauma Response



C. Who has a pathological response? - If traumatic events are ubiquitous, why do we not all have a post-traumatic stress disorder? When more than one person is exposed to the same traumatic event, why do they not all develop PTSD? These questions lead to the stressor-stressee conundrum and endless debate. At one extreme is the view that any reaction to trauma is a normal response to an abnormal event; at the other extreme is the view that only individuals who are predisposed develop a disorder. Consistent with this latter hypothesis is a psychoanalytic theory that internal conflicts and fantasy are the determinants of pathology. Some argue that the disorder is due to stress; others argue that it is due to diathesis, i.e., constitutional predisposition. On the one hand, it is generally held that experiencing a traumatic event is a *sine qua non* in the causation of PTSD. Therefore, the nature of the traumatic stressor and the degree of exposure are variables in determining who develops PTSD. On the other hand, even when the traumatic event is very extreme not everyone who is exposed develops PTSD. Therefore, other variables appear to be necessary as co-variants with a traumatic event in order for PTSD or a pathological trauma response to develop. Hence, a stress-diathesis model (Zubin & Spring), i.e., an interaction between the environment and the individual, would explain the risk of developing PTSD. The variables (risk factors) that have been studied can be grouped under the categories of the features of the traumatic stressor, individual variables, and sociological variables. Using the categories of pre-traumatic, peri-traumatic and post-traumatic would be another way of classifying these risk factors. It should be noted that many of these variables require more study.

1. Features of the Traumatic Stressor

- a. severity
- b. duration, degree of exposure
- c. proximity
- d. sudden onset & unexpected
- e. threat to life (Green *et al*, 1990)

- f. traumatic loss, bereavement
- g. violence
- h. exposure to the grotesque (Green *et al*, 1990)
- i. physical injury
- j. lack of uniformity of complex traumatic event for those involved in the event

2. Individual Variables

- a. cognitive appraisal – process of cognitive interpretation, i.e., the meanings we assign to the world as it unfolds before us (“in the eye of the beholder”; one person’s fear is another person’s challenge)
- b. attribution – the process by which one ascribes motives to their own or others’ behavior, e.g., answering the question “Why me?” with self-blame – characterological self-blame (esteem-related, focuses on one’s enduring qualities) vs. behavioral self-blame (control-related, commissions or omissions that effected outcome), e.g., “I never do anything right.” vs. “I should not have gone alone.”
- c. resilience (Flach, 1977)
- d. risk factors for developing PTSD - see II.A.3.c
- e. genetic factors (True *et al*, 1983)
- f. previous trauma
- g. intelligence
- h. peri-traumatic dissociation (Koopman *et al*, 1994; Shalev *et al*, 1995)

3. Sociological Variables

- a. social support during the traumatic stressor
- b. social support during recovery

II. Post-Traumatic Stress Disorders: PTSD and Acute Stress Disorder (ASD)

A. PTSD

1. **Definition:** A mental disorder in which there is the development of characteristic symptoms – persistent re-experiencing, avoidance and numbing, increased arousal – following exposure to an extreme traumatic stressor during which the person experiences intense fear, helplessness or horror. The symptoms must be present for more than one month and cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

2.. Historical

a. Civil War (1861-65)

“Irritable Heart” – 1871 – Jacob Da Costa, M.D. – Da Costa’s Syndrome – Civil War veterans – palpitations, chest pain, tachycardia, shortness of breath, tremulousness, sweats, fatigue, dizziness, phobias, nightmares, headache, parathesias, digestive disorders, nervousness – pathophysiology: disturbance of sympathetic nervous system – similar to but independent from descriptions from Crimean War (1853-56)

b. Railroad Accidents

- 1) “Compensation Neurosis” – 1879 – Rigler
- 2) “Railway Spine” – 1882 – Erichsen [“Erichsen’s Disease” – 1889 – Clevenger]
- 3) “Nervous Shock” – 1885 – Page
- 4) “Traumatic Neurosis” – 1889 – H. Oppenheim

- 5) summary: controversy over whether claims of injuries were malingering (1 above), a valid clinical entity with organic basis (2.) or a valid clinical entity which is psychological in origin (3)

c. WWI (1914-18)

- 1) "Traumatic Neurosis – 1915 – H. Oppenheim
- 2) "Shell Shock" -- 1917 -- Mott -- due to physical brain lesions caused by carbon monoxide or changes in atmospheric pressure secondary to exploding shells
- 3) "Soldier's Heart and the Effort Syndrome" -- 1919 -- Lewis -- chest pain, palpitations, tachycardia, fatigue
- 4) "Neurocirculatory Asthenia" -- 1918 -- Oppenheimer
- 5) "Shell Concussion" -- 1940 -- Meyers -- psychical causes
- 6) "Traumatic (War) Neurosis -- "physioneurosis" -- 1941 -- Kardiner

d. WWII (1939-45)

- 1) "Combat Stress" -- 1945 -- Grinker & J. Spiegel
- 2) "War Stress" -- 1947 -- Kardiner & H. Spiegel
- 3) other -- "Battle Fatigue," "Combat Fatigue"

e. DSM

- 1) I -- "Gross Stress Reaction" -- 1952 -- transient reaction in a "normal" person to deal with overwhelming fear after exposure to severe physical demands or extreme emotional stress (combat or civilian catastrophe)
- 2) II -- "Adjustment Reaction of Adult Life" -- 1968 -- reduced to a minor status

f. Vietnam War (1964-75) and Other

- 1) "Survivor Syndrome -- 1968 -- Niederland -- survivors of the Holocaust
- 2) "Rape Trauma Syndrome" -- 1974 -- Burgess & Holmstrom
- 3) "Post-Vietnam Syndrome," "Delayed Stress Syndrome," "Postcombat Syndrome" -- "Combat Stress Reaction" -- sociopolitical movement of the Vietnam era brought about recognition, Congressional legislation and funding of research and treatment programs

g. DSM

- 1) III -- "Post-traumatic Stress Disorder" -- 1980 -- a mental disorder caused by a traumatic event became firmly established -- Post-traumatic Stress Disorder became official name for this disorder.
- 2) III - R -- 1987 -- PTSD -- changes in diagnostic criteria were made: a) "Outside the range of usual human experience" was added to modify the stressor criterion (Criterion A). b) Intense psychological distress was added as a sub-criterion to the re-experiencing cluster of symptoms (Criterion B.). c) The avoidance/numbing cluster of symptoms (Criterion C) was expanded from three to seven sub-criteria. d) The third cluster of symptoms (Criterion D) which was not labeled was labeled as "increased arousal" symptoms. e) Survivor guilt was deleted as a sub-criterion. f) The sub-criterion of "irritability or outbursts of anger" was added to the arousal symptom cluster. g) The sub-criteria of memory impairment and avoidance of activities were removed from the 3rd symptom cluster (Criteria D) and placed in the avoidance/numbing symptom cluster. h) "Hyperalertness or exaggerated startle response was separated into two sub-criteria in the arousal symptom cluster and hyper-alertness was changed to hypervigilance. i) The temporal criterion of one month duration of symptoms was added (Criterion E). j) Subtypes were changed from acute and chronic or delayed to only delayed onset. k) The minimum number of sub-criteria of the avoidance/numbing symptom cluster required for the diagnosis was changed from one to three.
- 3) IV -- 1994 -- PTSD -- Major Changes: a) stressor criterion (Criterion A) -- Subjective

criteria was added to the objective criteria and "outside the range of usual human experience" was eliminated as a modifier of the traumatic stressor. b) The clinical significant criterion (Criterion F) was added. c) Minor Changes: (1) The physiological reactivity sub-criterion was moved from the arousal symptom cluster (Criterion C) to the re-experiencing symptom cluster (Criterion B). (2) The specifiers Acute and Chronic were re-introduced and redefined.

"Acute Stress Disorder" (ASD), a new diagnostic entity, was added.
(See II.B. Acute Stress Disorder.)

h.. Lessons from History

- 1) dialectic of collective recognition vs. denial of the horror of trauma and its effects, e.g., the horror of war is forgotten until the next major war when the traumatic disorder is rediscovered and given a new name
- 2) bias that PTSD is not a valid clinical entity but rather malingering
- 3) dichotomies of organic vs. functional, physical vs. psychical cause, biological vs. psychosociological are giving way to integrative, systems and multi-variant models

3. Epidemiology

a.. prevalence -- depends upon population at risk

- 1) National Vietnam Readjustment Study (Kukla *et al*, 1990) men 15.2% women 8.5%; lifetime: men 30.6% women 26.9%
- 2) urban young adults *
lifetime prevalence = 9.2%
- 3) Buffalo Creek -- (Green *et al*, 1990) -- 14 year follow-up 25% met criteria for PTSD
- 4) National Institute of Mental Health -- Epidemiological Catchment Area Study (NIMH-ECA) general population lifetime prevalence: St. Louis 1% (Helzer *et al*, 1987), North Carolina 1.3% (Davidson & Fairbank, 1993)
- 5) Rape Victims -- 70% (Bownes *et al*, 1991)
- 6) NIMH Comorbidity Study -- Lifetime Prevalence: 7.8% (female 10.4%, male 5% (Kessler *et al*, 1995)

b. risk of exposure to a traumatic event -- urban young adults -- low education, male, early conduct problems, extroversion, family history of mental illness/substance problems *

c. risk factors for developing PTSD -- female sex, neuroticism, family history of instability and deviance, early separation from parents, pre-existing anxiety or depression, family history of anxiety *

* (Breslau *et al*, 1991)

4. Phenomenology

a. DSM-IV Criteria

A. The person has been exposed to a traumatic event in which both of the following were present:

- (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
- (2) the person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior

B. The traumatic event is persistently reexperienced in one (or more) of the following ways:

- (1) recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
- (2) recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.
- (3) acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations and dissociative flashback episodes, including those that occur on awakening or when intoxicated) Note: In young children, trauma specific reenactment may occur.
- (4) intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
- (5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

- (1) efforts to avoid thoughts, feelings or conversations associated with the trauma
- (2) efforts to avoid activities, places, or people that arouse recollections of the trauma
- (3) inability to recall an important aspect of the trauma
- (4) markedly diminished interest or participation in significant activities
- (5) feeling of detachment or estrangement from others
- (6) restricted range of affect (e.g., unable to have loving feelings)
- (7) sense of foreshortened future (e.g., does not expect to have a career, marriage, children or a normal life span).

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

- (1) difficulty falling or staying asleep
- (2) irritability or outbursts of anger
- (3) difficulty concentrating
- (4) hypervigilance
- (5) exaggerated startle response.

E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

Acute: if duration of symptoms is less than 3 months

Chronic: if duration of symptoms is 3 months or more

Specify if:

With Delayed Onset: if onset of symptoms is at least 6 months after the stressor

[The underlying is mine.]

b. TRAUMA Mnemonic

T	rauma	(Criterion A. - Stressor Criteria)	
R	eeperiencing	(Criterion B. - Symptom Cluster)	need <u>1</u> of 5 sub-criteria
A	rousal	(Criterion D. - Symptom Cluster)	need <u>2</u> of 5 sub-criteria
U	nable	(Criterion F. - Clinically Significant Distress or Impairment)	
M	onth	(Criterion E. - Temporal)	
A	voidance	(Criterion C. - Symptom Cluster)	need <u>3</u> of 7 sub-criteria

c. Course -- onset any age; duration/prognosis: approximately 25% spontaneously remit within one year but 40% persist beyond six years (NIMH Comorbidity Study - Kessler *et al*, 1995)

d. Differential Diagnosis

1) Natural Trauma Response vs. Acute Stress Disorder or PTSD

2) Other Disorders Developing after a Traumatic Stressor

- a) Adjustment Disorder
- b) Anxiety Disorder
- c) Brief Psychotic Disorder
- d) Conversion Disorder
- e) Dissociative Disorder
- f) Exacerbation of a preexisting mental disorder
- g) Major Depressive Disorder
- h) Panic Disorder with or without agoraphobia
- i) Phobia

3) Co-morbid Disorders

- a) Dissociative Disorder
- b) Major Depression
- c) Panic Disorder with or without agoraphobia
- d) Psychoactive Substance Use Disorders

4) Trauma: Physical and/or Psychic

- a) Traumatic Brain Injury (TBI) (Mental Disorder Due to a General Medical Condition – Head Trauma)
- b) Postconcussional Syndrome (PCS) (Posttraumatic Syndrome) – a condition resulting from head trauma consisting of headache, dizziness, fatigue, mood changes, attention and memory difficulties – note: because of similar terms this is often confused with PTSD
TBI or PCS may be present instead of ASD or PTSD or may be co-morbid with ASD or PTSD

5) Mutually Exclusive Criteria

- a) Adjustment Disorder (if symptoms of PTSD are present but the stressor is not extreme, i.e., not life-threatening, no threat of or actual injury, e.g., being fired, marital separation)
- b) Malingering
- c) Normal Bereavement or Pathological Grief
- d) Obsessive-Compulsive Disorder (recurrent intrusive thoughts are not related to trauma)
- e) Psychosis (Schizophrenia, Psychotic Disorder due to General Medical Condition, Major Depression with Psychotic Features, delirium, Substance-induced disorder, Other Psychotic Disorders) – flashbacks, hallucinations, illusions of PTSD must be distinguished from the perceptual disturbances in these disorders

6) Disorders Associated with Childhood Trauma

- a) Borderline Personality Disorder
- b) Disorder of Extreme Stress Not Otherwise Specified (DESNOS) – not a DSM diagnosis
- c) Eating Disorders
- d) Multiple Personality Disorder

5. Psychobiology and Biopsychosociological Models

a. Data -- Biological Alterations

- 1) heightened sympathetic activity
- 2) excessive adrenergic activity
- 3) serotonergic abnormalities
- 4) increased dopaminergic activity

- 5) GABA/benzodiazepine receptor changes
- 6) exaggerated startle response
- 7) provocation of panic attacks and flashbacks
- 8) opioid system dysregulation
- 9) HPA (hypothalamic-pituitary-adrenal) axis abnormalities
- 10) elevated thyroid function
- 11) suppression of immune response
- 12) reduced hippocampal volume
- 13) increased blood flow right-sided limbic, paralimbic, visual areas; decreased blood flow in left inferior frontal and middle temporal cortex [PET & Script-Driven Imagery]

b. Theories

- 1) Biological
 - a) Septohippocampal (Gray, 1992) novel, unpleasant environmental cues \implies SH system \implies response (inhibition of motor system, increased arousal, hypervigilance)
 - b) Locus Ceruleus LC = central control mechanism of sympathetic nervous system (SNS) responds to threatening stimuli
 - c) REM Sleep Disturbance (Ross *et al.*, 1989)
- 2) Psychological
 - a) Psychoanalytic (Freud, 1920) Economic Model traumatic stimuli \implies breakthrough of stimulus barrier \implies increased libidinal excitation \implies repetition-compulsion (reexperiencing) \implies decrease of excess energy (mastery)
 - b) Behavioral
 - 1) Classical Conditioning (Pavlov, 1927) repeated aversive stimuli/environmental threat [unconditioned stimuli (UCS)] + cues associated with the trauma [Conditioned Stimulus (CS)] \implies defensive reaction [Conditioned Response] (CR), hence CS \implies CR
 - 2) Operant Conditioning: avoidance behavior reduces anxiety and fear \implies reinforcement of avoidance behavior
 - c) Cognitive Reprocessing (Horowitz, 1978) traumatic event \implies incongruence with internal schemata \implies active memory (reexperiencing) vs. completion tendency + information processing \implies integration of traumatic event and schemata (self and world images)
- 3) Biopsychological
 - a) Physiogenesis - (Kardiner, 1941) see I.B.
 - b) Inescapable Shock (Van der Kolk *et al.*, 1985) based on learned helplessness (Seligman *et al.*, 1968) inescapable shock (trauma) \implies transient catecholamine depletion + endogenous opioid release (numbing) \implies stress induced analgesia, hence re-exposure \implies paradoxical calm alternates with cessation of stimuli \implies opioid withdrawal + noradrenergic hypersensitivity \implies physiological hyperactivity [repetition + mastery]
 - c) Neuropsychological (Kolb, 1987) excessive emotional stimulation \implies stimulus overload \implies perceptual discrimination & cortical defensive structural processes cannot process information \implies sensitization of neurophysiology \implies synaptic change or if chronic high intensity stimuli \implies depression of synaptic processes & of habituating learning \implies impaired cortical control of hindbrain structures \implies aggressive expression + sleep-dream cycle disturbance
 - d) Kindling (Post 1984, 1992) stressor \implies triggers 1st episode \implies stressor sensitization + episode sensitization \implies subsequent spontaneous episodes. Sensitization encoded on level of gene expression: stressor \implies neurotransmitter \implies 2nd messenger \implies induction of transcription factors \implies mRNA induction \implies protein synthesis [neuropeptides] \implies alteration of, e.g., CRH (corticotropin-releasing hormone)
 - e) Stressor-Induced Oscillation (Antelman *et al.*) intermittent exposure to stressor \implies neurochemical & behavioral oscillation or bi-directional cycling
- 4) Sociological
 - a) cultural variants, e.g. survivor guilt

b) traumatic environment

c) recovery environment

- c. **Psychological Themes:** fear of repetition, fear of merger with victim, shame and rage over vulnerability, rage at the source, rage at those exempted, fear of loss of control of aggressive impulses, guilt or shame over aggressive impulses, guilt or shame over surviving, sadness over losses. (Horowitz, 1986)

6. Treatment

a. Treatment Guidelines

The Expert Consensus Guideline Series Treatment of Posttraumatic Stress Disorder

Editors: Foa, E.B., Davidson, J.R.T and Frances, A

J. of Clinical Psychiatry, 1999 Supplement 60:16

Effective Treatments for PTSD Practice Guidelines from the International Society for Traumatic Stress Studies (ISTSS)

Editors: Foa, E.B., Keane, T. M. and Friedman, M. J.

The Guilford Press, New York, 2000

b. Consensus Guidelines

Acute PTSD (1-3 months duration): mild: start psychotherapy

moderate-severe: start combination (psychotherapy and psychopharmacotherapy)

Chronic (> 3 months): start combination (opinion of psychopharmacologists)

start psychotherapy if necessary add medication (psychotherapists)

Comorbidity: use combination

Psychopharmacotherapy: first line – selective serotonin reuptake inhibitor (SSRI), Zoloft (sertraline) FDA approved December 1999; Paxil (paroxetine) FDA final approval pending

Psychotherapy: Psychoeducation and Individual Psychotherapy: Cognitive Therapy, Behavior Therapy (Prolonged Exposure) Anxiety Management if necessary

c. Other

1). family/group – adjunctive

2). hypnosis – caveat regarding use for recovered memories

3). Eye Movement Desensitization and Reprocessing (EMDR) (F. Shapiro, 1989) – ISTSS = found to be an effective treatment but use of alternating movements including eye movements not proven

4) psychodynamic

5) in-patient treatment

6) psychosocial rehabilitation

7) Thought Field Therapy (TFT), Traumatic Incident Reduction (TR), Time-Limited Therapy (T-LIT), Visual/Kinesthetic Dissociation (V/KD) – all not proven

B. Acute Stress Disorder

1. **Definition:** The development of characteristic anxiety, dissociative and other symptoms that occur within 1 month after exposure to an extreme traumatic stressor.

2. Phenomenology

DSM-IV Criteria

- A. Same as PTSD
- B. Either while experiencing or after experiencing the distressing event the individual has three (or more) of the following dissociative symptoms:
 - (1) a subjective sense of numbing, detachment or absence of emotional responsiveness
 - (2) a reduction in awareness of his or her surroundings (e.g., "being in a daze")
 - (3) derealization
 - (4) depersonalization
 - (5) dissociative amnesia (i.e., inability to recall an important aspect of the trauma)
- C. The traumatic event is persistently reexperienced in at least one of the following ways: recurrent images, thoughts, dreams, illusions, flashback episodes, or a sense of reliving the experience; or distress on exposure to reminders of the traumatic event.
- D. Marked avoidance of stimuli that arouse recollections of the trauma (e.g. thoughts, feelings, conversations, activities, places, people).
- E. Marked symptoms of anxiety or increased arousal (e.g., difficulty sleeping, irritability, poor concentration, hypervigilance, exaggerated startle response, motor restlessness).
- F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or impairs the individual's ability to pursue some necessary task, such as obtaining necessary assistance or mobilizing personal resources by telling family members about the traumatic experience.
- G. The disturbance lasts for a minimum of 2 days and a maximum of 4 weeks and occurs within 4 weeks of the traumatic event.
- H. The disturbance is not due to the direct physiological effect of a substance (e.g., a drug of abuse, medication) or a general medical condition, in not better accounted for by a Brief Psychotic Disorder, and is not merely an exacerbation of a preexisting Axis I or Axis II disorder.

[The underlying is mine.]

III. Prevention

Major role for all physicians but especially important for primary care physicians

A. Primary Prevention

1. safety
2. reduction of violence and accidents
3. preparedness for disasters
4. diagnosis and treatment of psychoactive substance use disorders
5. diagnosis and treatment of sleep disorders
6. early detection and intervention of abuse (domestic violence, child abuse)
7. suicide prevention

B. Secondary Prevention

1. early detection of trauma-response
2. emphasis on natural response (accident, disaster, rape victims; rescue workers, physicians and other health care workers)
3. restoring safety
4. emotional support
5. group experience

6. critical incident stress management (CISM) and debriefing (CISD) (J. Mitchell, 1983)
7. social/cultural rituals
8. counseling
9. identifying populations at risk, e.g., individuals with pre-existing mental illness

C. Tertiary Prevention

1. early detection of pathological trauma-response -- ASD, PTSD -- Other Disorders
2. referral to psychiatrist for evaluation and treatment

Traumatic Stress and Posttraumatic Stress Disorder Recognition and Prevention

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PTSD: Biological Data

Heightened sympathetic activity
Excessive adrenergic activity
Serotonergic abnormalities
Exaggerated startle response
Provocation of panic attacks and flashbacks
Opioid system dysregulation
HPA axis abnormalities
Elevated thyroid function
Reduced hippocampal volume
Script driven imagery PET scan changes

Traumatic Stress and PTSD Educational Objectives

At the conclusion of this introduction to this topic, you should be able to recognize the manifestations of traumatic stress, diagnose PTSD, be respectful to those who suffer from psychic trauma, and know how to prevent traumatic stress and PTSD.

1. Why is it important for you to be knowledgeable about the impact of traumatic events on human beings?
2. How does one recognize traumatic stress and PTSD?
3. What is your role in the prevention of traumatic stress and PTSD?

Traumatic Stress and PTSD Topics

1. Diagnostic criteria
2. Protective/Risk Factors
3. Clinical case
4. Prevention

Trauma Mnemonic

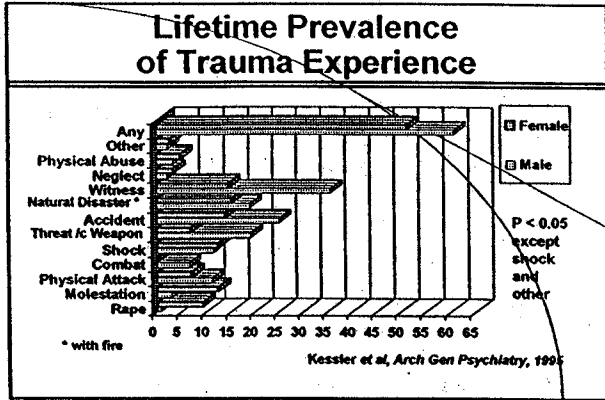
TRAUMATIC STRESSOR		A
REEXPERIENCING	1 OF 5	B
AROUSAL	2 OF 5	D
UNABLE		F
MONTH		E
AVOIDANCE	3 OF 7	C

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PTSD: DSM-IV Criteria - A

The person has been exposed to a traumatic event in which both of the following were present:

- (1) the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
- (2) the person's response involved intense fear, helplessness or horror



Traumatic Stress Screening Question

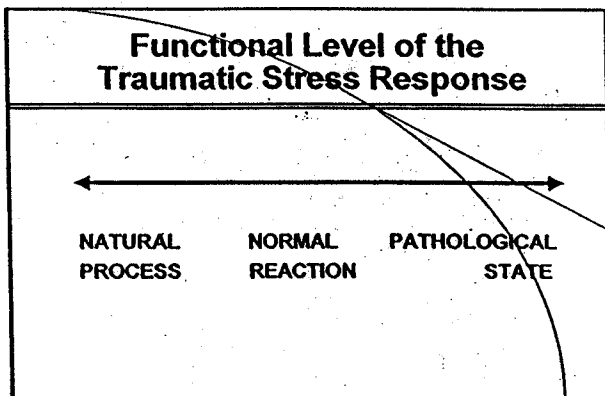
“Was there ever a time when you thought you were about to die or your life was threatened or you came close to death?”

LAWRENCE C. KOLB, M.D.

Differential Diagnosis

Normal trauma response or acute stress disorder
 Other disorders after a traumatic stressor
 Trauma: physical and/or psychic
 Co-morbid disorders
 Mutually exclusive criteria
 Disorders associated with childhood trauma

- ### Trauma Response Characteristics
- Biphasic
 - Dynamic
 - Positive/negative features
 - Adaptive
 - Variety of emotions
 - Biopsychosociological components
 - Dissociative process



Prevalence of PTSD

STUDY	LIFETIME PREVALENCE
Breslau et al, 1991	9.2%
NIMH-ECA	
Davidson & Fairbank, 1993	1.3%
Helzer et al, 1987	1.0%
NIMH-Comorbidity	
Kessler et al, 1995	F 10.4% M 5%
Resnick et al, 1993	F 12.3%

Problems

- Why doesn't everyone who is exposed to a traumatic event develop PTSD?
- Why do some individuals develop the symptoms of PTSD after exposure to a life stressor or low magnitude event?

Variables Relating to the Development of PTSD

- Traumatic Stressor
 - Definition
 - Features
- Individual variables
 - Pre-traumatic
 - Peri-traumatic
- Environmental variables
 - Pre, peri and post-traumatic

Protective / Risk Factors

Features of the Traumatic Stressor

- Severity
- Degree of exposure
- Proximity
- Sudden onset
- Threat to life
- Traumatic loss
- Violence/atrocities
- Exposure to the grotesque
- Physical injury
- Lack of uniformity

Disaster Studies: Post Disaster Body Handlers

INVESTIGATOR	DISASTER	RESULTS
TAYLOR & WILLIAMS J HU STRESS, 1982	MT. EREBUS AIR CRASH ANTARCTIC, 1979	33% INITIAL TRANSIENT PROBLEMS (20% IF 3 MO) 20 MO FOLLOW UP 2% OF STRESS
JONES AJP, 1985	JONESTOWN MASS SUICIDE, 1978	SHORT TERM DYSPHORIA, 1% & < 25 YO, ENLITENED, > EXPOSURE
MCCARROLL ET AL B J CLIN PSYCH, 1993	PRE-DISASTER	IF > EXPERIENCE = < ANTICIPATORY AX
JTS, 1985	PRE-DISASTER	ANTICIPATORY AX = GRUESOMENESS OF REMAINS, EMOTIONAL LINK IC VICTIM, PERSONAL THREAT TO HANDLER
URSANO & WCCARROLL J NER MENT DIS, 1990	VARIOUS DISASTERS	CHILDREN'S MUTILATED BODIES; NATURAL LOOKING BODY; SENSORY STIMULI (GOOD); NOVELTY, SURPRISE, SHOCK; ID & EMOTIONAL INVOLVEMENT; BURNED, FLOATER, DECAP
URSANO ET AL AJP, 1989	USS IOWA EXPLOSION, 1989	ID IC DECEASED AS FRIEND = PTSD, > INTRUSIVE & AVOIDANCE; AS FAMILY MEMBER = INTRUSIVE BVM; AS SELF = NO DIFFERENCE

Protective / Risk Factors

Individual Variables

- Attribution
- Cognitive appraisal
- Genetic factors
- Experience
- Intelligence
- Peri-traumatic dissociation
- Personality
- Previous trauma
- Resilience
- Other factors

Individual Variables: Genetic Factors

- Monozygotic versus dizygotic
- Total twin pairs = 4,042
- Vietnam veterans
- Controlled for combat exposure
- Variance due to genetic factors
 - 13-30% Reexperiencing symptoms
 - 30-34% Avoidance symptoms
 - 28-32% Arousal symptoms

True et al, 1993

Protective / Risk Factors

Environmental Variables

- Early life environment
- Social support during the traumatic event
- Social support after the traumatic event

Lessons from History

- **Dialectic: collective recognition versus denial**
- **Bias: not a valid clinical entity**
- **Dichotomies are replaced by integrative, systems and multi-variant models**

Top 10 Causes of Disability and Premature Mortality Worldwide

Rank	Disease or Injury	Disability-Adjusted Life Years*	
		Males	Females
1	Unipolar Major Depression	16,664	27,651
2	Tuberculosis	16,321	8,736
3	Road Traffic Accidents	13,096	7,608
4	Alcohol Use	11,040	7,095
5	Self-inflicted Injuries	10,937	6,463
6	Bipolar Disorder	7,899	6,419
7	War	7,850	5,961
8	Violence	6,736	6,896
9	Schizophrenia	6,646	6,367
10	Iron-Deficiency Anemia	6,098	6,235

* (in thousands) used to quantify the burden of disease in terms of premature mortality and living with disability for people aged 15-44 in 1990

Prevention: Primary

- **Safety**
- **Reduction of violence and accidents**
- **Preparedness for disasters**
- **Diagnosis and treatment of psychoactive substance use disorders**
- **Diagnosis and treatment of sleep disorders**
- **Detection and intervention of abuse**
- **Suicide prevention**

Detection: Abuse of Woman

22-35% of women seeking care for any reason in emergency departments
 19-30% of injured women seen in emergency departments
 25% of women utilizing psychiatric emergency service
 25% of women who attempt suicide
 23% of pregnant women seeking prenatal care
 14% of women seen in internal medicine clinics
 AMA Diagnostic and Treatment Guidelines on Domestic Violence

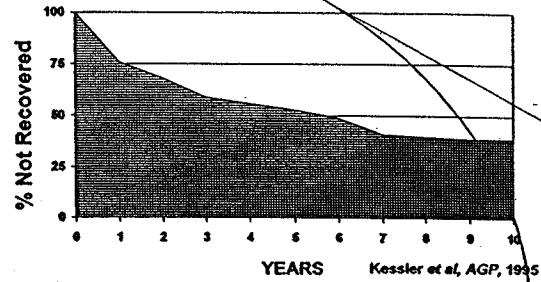
Prevention: Secondary

- **Early detection of trauma response**
- **Emphasis on natural response (accident, disaster and rape victims, rescue workers, physicians, others)**
- **Restore safety**
- **Emotional support**
- **Group experience**
- **Critical incident stress debriefing**
- **Social and cultural rituals**
- **Identifying populations at risk**

Prevention: Tertiary

- Early detection of pathological traumatic stress (ASD, PTSD, other disorders)
- Referral to psychiatrist for further assessment and for treatment

Chronicity of PTSD



PTSD Treatment: Effect Sizes

Psychological	.82
Pharmacological	.41
SSRIs	.77
MAO-I	.39
TCAs	.32
Benzodiazepines	.25

Panava, S.J. et al, *Depress Anxiety*, 4:240, 1996-97