Psychiatric Dimensions Post-Disaster: A Public Health Perspective

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"I am not a lazy bum! I am a potential workaholic with highly developed stress management skills!"
Public’s Mental Health

- Protect nation’s capabilities, values, infrastructure and social capital
- Mitigate propagation of fear, distress, unhealthy changes in behavior, psychiatric disease
- Must be community, population focus
- Promote community cohesiveness
What is a Disaster?

- Traumatic events that overwhelm a community
- A severe psychosocial disruption which can greatly exceeds the coping capacities of the community
- Disaster vs Mass Casualties Incidents
Disaster Pyramid

Disaster Victims

Families/Friends/Rescue Workers

Medical Professionals

Public At Large

Presentation by Reissman, 2005
Potential Long Term Disaster Issues

- Disaster itself
- Death and injuries
- Displacement/relocation
- Relationship dynamics (loss and gain)
- Uniqueness and isolation
- Job loss
- Financial loss
- Post disaster experiences
- Anniversaries
Ripple Effects of Disasters

- Population shift
- Cultural displacement
- Long term unemployment
- Health problems related to ongoing stress and psychological distress
- Poor life adjustment
- Loss of functional capacity
- Media coverage
- Discrimination/scapegoating
Factors Associated With Mental Health Outcomes and Resilience

- The Event
- Community/Societal Structures
- Idiosyncratic characteristics of the individuals involved, including their interpersonal/familial relationships

Warheit, 1986
Groups at Increased Risk

- Greater traumatic exposure, injury, threat
- Women
- Middle-aged adults
- Ethnic minorities
- Children of distressed parents
- Mothers with young children

- Number of negative life events
- Greater loss of resources
- Poor social support
- Prior psychological sx, substance abuse
- Worry and anxious traits

(Norris FH et al, 2002)
Underlying Assumptions

- The majority of survivors and family members will successfully “recover” without MH assistance.
- “Recovery” involves reclaiming and reconstructing one’s life - finding a “new normal,” which occurs gradually over years.
- A significant minority will experience PTSD, depression, anxiety and distress and may benefit from MH intervention.
- Most people experiencing disaster trauma do not develop long term psychiatric pathology.
Common Diagnoses in Disasters

- Acute stress disorder
- Panic disorder
- Adjustment disorder with depressed, anxious or mixed features
- Exacerbation of Personality disorders
- Psychotic illness, including Brief Psychotic Disorder
- Substance use (exacerbations)
- Psychiatric Disorder due to medical conditions
- Exacerbation of pre-existing PTSD
Post-Traumatic Stress Disorder
LIFETIME PREVALENCE OF PSYCHIATRIC DISORDERS: NATIONAL COMORBIDITY STUDY

Adapted from Kessler et al. 1994, 1995

**MOOD DISORDERS**
- Major depression

**ANXIETY DISORDERS**
- GAD
- Panic disorder
- PTSD

**SUBSTANCE USE DISORDERS**
- Alcohol use disorder
- Drug use disorder
Risk of PTSD Following Specific Traumas in The U.S. Population

- Kidnapping, torture, captivity: 54%
- Rape: 49%
- Beating: 32%
- Shooting or stabbing: 15%
- Natural disaster: 4%

Incidence of PTSD

- 28% had PTSD one month after cafeteria shooting with 18% having another psych dx
- 24% had PTSD one year later and 12% with another psych dx
  
  North CS et al. 1997

- ½ of PTSD cases over 3 years were in remission

  North CS et al. 2002
DSM-IV CRITERIA FOR PTSD

A. Exposure to **traumatic event** - threat to life or limb
   - with victim response of fear, helplessness, or horror

B. ≥ 1 **new** Group B symptom (**Re-experiencing**):
   - Intrusive memories
   - Nightmares
   - Flashbacks
   - Upset by reminders
   - Physiologic reactivity to reminders

C. ≥ 3 **new** Group C symptoms (**Avoidance/Numbing**):
   - Avoids thoughts/feelings
   - Avoids reminders
   - Event amnesia
   - Loss of interest
   - Detachment/estrangement
   - Restricted range of affect
   - Sense of foreshortened future

D. ≥ 2 **new** Group D symptoms (**Hyperarousal**):
   - Insomnia
   - Irritability/anger
   - Difficulty concentrating
   - Hypervigilance
   - Exaggerated startle

E. Duration > one month

F. Clinically significant distress/impairment functioning

**Note:** Delayed onset ≥ 6 months; Chronic ≥ 3 months

B, C, & D symptoms must be **new** after the event to qualify;
existing symptoms such as sleep problems in the population are not counted & will yield inflated estimates of PTSD rates.
PTSD Symptom Groups
Oklahoma City Bombing (N=182)

Group B
Intrusive re-experience

Group C
Avoidance/numbing

Group D
Hyperarousal

Groups B, C, and D
PTSD

North et al 1999
How Do You Diagnose PTSD?

Not with a questionnaire, but the old fashioned way... by taking a history to determine if DSM-IV-TR diagnostic criteria are met.

NEED TO MEET ALL 6 CRITERIA:
A, B, C, D, E, AND F
Disasters and Psychopathology

But.........
Disasters and Psychopathology

- Although lifetime risk for exposure to PTE is extremely high (60%-90%), the prevalence of PTSD is relatively low
  
  Breslau et al., 1998; Kessler et al., 1995

- Approximately 9% of individuals exposed to any PTE report PTSD at some point across the lifespan

  Breslau et al., 1998

- Majority of individuals experience substantial reductions in PTSD symptoms through the first three months and recover without professional help

  Rothbaum et al, 1992; Valentiner et al, 1996
Psychological Effects of Disaster

- Post traumatic stress of 17% at 2 months after 9/11, 5.8% at 6 months
- Greater risk with female gender, marital separation, and previous physician diagnosed depression and anxiety disorder
- Disengagement of coping skills associated with greater risk
- PTSD prevalence of 7.5% at 1 month after 9/11 to 0.6% at 6 months

Silver RC et al. 2002

Galea S et al. 2003
Psychological Effects of Disaster

- Low rates of PTSD but high rates of post traumatic sx’s after school shooting
  
  Schwarz ED & Kowalski JM, 1991

- 5% met criteria for PTSD but 96% with PTSD sx’s 3 years after a courthouse shooting
  
  Johnson SD et al. 2002
Most people experiencing disaster trauma do not develop long term psychiatric pathology.
Mental Health in Disaster

Distress Responses

Mental Health/Illness
- PTSD
- Depression

Human Behavior in High Stress Environments
- Smoking
- Alcohol
- Over dedication

Change in Safety
Change in Travel

Human Behavior in High Stress Environments

Center for Traumatic Stress Studies
2005
Types of Distress Behaviors

- Changes in lifestyles
- Changes in travel
- Tobacco, alcohol use
- School dropout rates
- Work absenteeism or overwork
- Divorce
- Domestic or interpersonal violence
- Health care seeking
Hurricane Katrina (2005) Problems 5-8 months post (N=1043)

Current practical problems

- Financial
- Housing
- Employment
- Services
- Insurance

Kessler et al., 2006
Examples of Public Responses to Epidemic and Bioterrorism Threat

- Mass Exodus/Non-cooperation with authorities
  - Three Mile Island, US, 1979\(^1\) and Plague in Surat, India, 1994\(^2\)

- Change in consumerist behavior
  - Mad Cow Disease, England, 1996\(^3\) and SARS, Toronto, 2003\(^4\)

- Stigmatizing the group perceived to be affected
  - AIDS, US, 1980s\(^5\) and SARS, Toronto, 2003\(^6\)

- Increase in demand for health services by non-affected people
  - Anthrax, US, 2001\(^7\) and Sarin gas attack, Tokyo, 1995\(^8\)

- Call for extreme government measures
  - SARS, Toronto, 2003\(^9\) and AIDS, US, 1985\(^10\)

Disaster Effects

- Perceived Safety
- Change in Behavior
- Stigmatization
- Confidence in Government
Risk Perceptions

“Whereas technologically sophisticated analysts employ risk assessment to evaluate hazards, the majority of citizens rely on intuitive risk judgments, typically called “risk perceptions.””

Slovic, 1987
Mellisa Williamson, 35, a Bullitt Avenue resident, worries about the effect on her unborn child from the sound of jackhammers.
Perceived Safety

- Erode sense of national security
- Disrupt the continuity of society
- Destroy social capital
  - Morale
  - Cohesion
  - Shared Values
Longitudinal National Study of Reactions to Terrorist Attack

2 weeks (N=2729), 2 months (N=933)
6 months (N=787)

Outside of NYC

9/11 Posttraumatic Stress
2 mos. 17.0%
6 mos. 5.8%

Silver et. al. 2002
Longitudinal National Study of Reactions to Terrorist Attack

2 weeks (N=2729), 2 months (N=933) 
6 months (N=787)

Outside of NYC

Fears of Future Terrorism 64.6% 37.5%
Fear of Harm to Family 59.5% 40.6%

Silver et. al. 2002
## Change in Consumerist Behavior: The Economic Impact of SARS

### Precautions against SARS

<table>
<thead>
<tr>
<th>Action</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoided public events</td>
<td>16%</td>
</tr>
<tr>
<td>Avoided international air travel*</td>
<td>9%</td>
</tr>
<tr>
<td>SARS has made it unsafe to travel to Canada</td>
<td>35%</td>
</tr>
</tbody>
</table>


*Among those who reported international air travel in the past 12 months*
People Take More Precautions When Concerned

Example: In Toronto, those concerned about SARS took more precautions

- Used a disinfectant at home or at work: 56% (56%) vs. 39% (39%)
- Avoided Asian restaurants or stores: 32% (32%) vs. 11% (11%)
- Avoided public events: 29% (29%) vs. 8% (8%)
- Carried a disinfectant to clean objects: 28% (28%) vs. 19% (19%)
- Avoided people you think may have recently visited Asia: 26% (26%) vs. 7% (7%)
- Purchased a face mask: 21% (21%) vs. 10% (10%)

Disaster

- Opens the fault lines, the potential cracks in our society
  - Racial/ethnic
  - Economic
  - Religious
Cycle of Disaster Mental Health

- Pre-Disaster
- Acute Response
- Post-Disaster

- Planning and preparedness
- Education
- Mitigation
- Response
- Recovery
State and Local Systems

- State disaster plan has mental health component
  - Disaster mental health response coordinated through community mental health services—must also sustain care of regular patients
  - Gaps in services and outreach—clinics serve pre-existing client base and private practitioners may not have relationship with gov’t agencies to provide care
  - Federal funding does not cover extensive ongoing care
  - Transition from post-disaster psychological counseling to ongoing care
  - Importance of school-based mental health services
Private Sector Systems

- Human services providers
- Workplace Employee Assistance Programs
- Primary Care
- Faith-based
- Local providers
Integration of Disaster Mental Health, Public Health & Human Services

- Better assessment of needs of the community and in turn the individuals
- Ensure buy in by all parties and stakeholders
- More efficient resource allocation
- Focus on basic human services and medical needs
FIGURE 2-1 Severity of psychological reactions experienced by the population following a traumatic event.

NOTE: Indicative only.
Immediate/Delayed Reactions to a Sudden and Violent Event

- Physical
- Emotional
- Cognitive
- Behavioral
- Spiritual
Hurricane Katrina (2005)
Stress Reactions at 5-8 months (N=1043)

Kessler et al, 2006
Health Issues and Disaster

- Disaster exposure increased primary health care use for 12 months or more after the event
  Freedy JR and Simpson WM. 2007

- Victims with pre-disaster psych issues were at greater risk for post-disaster psych problems

- Relocated victims showed excess of MUPS especially in the period of increased media attention

- Both groups of victims had increased GI morbidity
  Yzermans CJ et al. 2005
Signs of Impairment

- Inability to use life support systems such as family, friends and social groups
- Inability to care for self and family
- Inability to deal with benefit issues
- Suicidal and homicidal behaviors
- Psychosis
- Marked anxiety and depression
Principles of Disaster Mental Health Service

- Resilience and recovery
  - Most cope well, even strengthened
  - May be transformative—"post-traumatic growth"
  - Not a fixed attribute but variable: vulnerability, protective mechanisms, affective and coping style

- Pre-disaster level of functioning
- Avoidance of mental health labeling
  - "Stress and support" services
- Support local community care
Phases of Mental Health Response

- Emergency- Triage: Protect, Direct, Connect
- Post-impact—up to 8-12 weeks, psychoeducational interventions, crisis counseling
- Restoration—long term recovery programs
Goals of Disaster Mental Health Services

- Crisis stabilization
- Surveillance
- Promotion of resilience, coping
- Manage acute stress reactions
- Reduce maladaptive behaviors
- Flexible, supportive, problem-solving
- Maintain and improve role function
- Prevent, treat chronic distress, illness
- Referral
How Do We Know How to Respond Following Disasters?

- Disaster Research
- Extrapolation
- Consensus
- Clinical Experience
- Customer feedback
- Program evaluation
Evidence Base for Early Intervention for Adults

- **High level of evidence:**
  - none

- **Medium level of evidence:**
  - Cognitive Behavioral Therapy

- **Low levels of evidence:**
  - Debriefing, EMDR, Psychopharmacology, Psychodynamic therapy, “Alternative” therapies
Evidence Base for Later-Stage Interventions for Adults

- High level of evidence:
  - CBT

- Medium level of evidence:
  - EMDR, SSRIs

- Low level of evidence:
  - Psychodynamic therapy, “Alternative” therapies
General Considerations

- Consider social structure of community
  - Socio-economic status, gender, race ethnicity
  - Diverse effects of disaster’s: loss of life, injury, property damage, economic impact
- Respect victims’ internal and external coping capacities
- “First, do no harm” (NIMH, 2002)

Tierney, 2000
Norris et al, 2002
Everly, 2003
General Principles

- Challenges in assessment
- Vulnerability to side effects
- Clarification of goals
What do you see?
NOW what do you see?

FedEx®

FedEx®
YOU'RE ANGRY
AREN'T YOU?
AREN'T YOU?

NO!
Assessment

- Conduct a standard interview
- **Emphasize 5 key risk factors for psychopathology:**
  - Past psychiatric history
  - “dose of trauma” (exposure)
  - Problems of living prior to disaster
  - Level of impairment
  - Availability of psychosocial supports
- Don’t forget ETOH/Drug use
Psychological First Aid

Approach endorsed by an international expert panel* for universal application after mass violence or disaster.

Psychological First Aid

- Flexible, supportive, problem-solving
- Needs of survivors—not aimed at emotional processing
  - Help navigate services
  - Obtain food and shelter
  - Keep families together, facilitate reunion
  - May allow sharing thoughts and feelings
  - Permission to recontact
- Proximity, Immediacy, Expectancy
Psychological First Aid
Field Operations Guide, 2\textsuperscript{nd} Ed.

www.nctsn.org
Or
www.ncptsd/va/gov
Response to Disaster - Treat Disabling Symptoms

- **Insomnia**
  - Teach sleep hygiene, relaxation techniques
  - Consider short-term medication (non-benzodiazepines first)

- **Anxiety**
  - Teach relaxation exercises
  - Physical exercise, rewarding activities
  - Cautious, brief benzodiazepines for severe symptoms

- **Acute stress disorder**
  - Consider SSRI trial for symptoms of anxiety or depression—no data proving prevention of PTSD
 Intermediate-Intensity Individual Counseling

- 2-3 weeks post trauma, 4-5 sessions
- Cognitive-behavioral approach
  - Education
  - Anxiety management training
  - Imaginal exposure training, in-vivo exposure
  - Cognitive restructuring (CR)
- Tested in survivors of MVAs, industrial accidents, nonsexual assault
  - Appears to prevent PTSD
SMACK!

SNAP OUT OF IT!

TISSUES

SINGLE SESSION THERAPY
Acute Stress Disorder: CBT

Study of 80 civilian trauma survivors with ASD:

- Randomized to CBT or supportive counseling in month after trauma
- 4 years later:
  - PTSD in 8% CBT, 25% supportive counseling
  - CBT: ↓ PTSD symptoms, especially avoidance
- CBT immediately after trauma may have lasting benefits for those at risk for PTSD

Psychotherapy of PTSD

• Meta-analysis of controlled psychotherapies (cognitive, behavioral, psychodynamic): significant symptom reduction over time for all

• Cognitive therapy
  ▶ Cognitive model: PTSD patient cannot process trauma
  ▶ Treatment helps pt. process traumatic memories and automatic negative expectations

• Behavioral therapy
  ▶ Behavioral model: classical conditioning produces PTSD
  ▶ Treatment de-conditions PTSD by pairing relaxation techniques with systematic desensitization

• Dynamic psychotherapy for concomitant personality disorders or maladaptive behaviors

Components of Trauma-Focused Cognitive Behavioral Therapy TF-CBT: Practice

- Psychoeducation, Parenting skills
- Relaxation, personalized to child, adolescent and parents
- Affect modulation skills
- Cognitive restructuring (thoughts, feelings, behaviors)
- Trauma narrative and contextualizing interventions
- In vivo mastery of trauma reminders
- Conjoint child-parent sessions
- Enhancing safety and social skills
Eye Movement Desensitization Reprocessing (EMDR)

- Accidentally discovered 1987 when saccadic eye movements paired with active processing of traumatic memories reduced distress.
- Successful desensitization described in 2-3 sessions of 90 minutes.
- Some studies supportive of EMDR’s benefits:
  - Sheck et al, 1998; Wilson et al, 1996
- Other studies suggest eye movement may not be necessary to effective treatment:
  - Dunn et al, 1996; Pitman et al, 1996
Virtual Reality Exposure Therapy for PTSD Vietnam Veterans

- Imaginal exposure immersed in stimuli
  - Sense of presence, immersive
- Interactive computer simulation
  - Hardware
    - Head-mounted display, position and hand trackers
    - Headphones, microphone, monitor, thunder chair
- Virtual Huey helicopter
  - Simulates flying over jungles, walking in jungle clearing
- Small study
- 10 PTSD veterans on meds, with moderate to severe PTSD
- Significant improvement 3 months & 6 months later

Rothbaum et al, 2001
Medication Treatment

- SSRI’s (Sertraline, Fluoxetine, Paroxetine, Citalopram)
- TCA’s (Nortriptyline, Imipramine)
- Propranolol/Clonidine (Propanolol, Methyldopa)
- Anxiolytic medications/Benzodiazepines (i.e., Lorazepam, Clonazepam, Alprazolam)
- Hypnotic (Zolpidem, Zaleplon, Trazadone)
- Mood stabilizers (Lithium, Valproic Acid)
- Antipsychotics (Haloperidol, Chlorpromazine, Olanzapine)
Implications of Medication Use

- Legitimizing distress/impairment
- Overshadow other problems (i.e., psychosocial, financial)
- Reliance on medication
- Labeling pt
- Potential long term side effects
- Disability issues
Ways to Increase Compliance

- Recognize patient’s concerns
- Support and reassurance
- Elicit social support/family
- Target distressful symptoms
- Address side-effects promptly
- Reaffirm goals
- Permit some patient flexibility
Other Forms of “Intervention”

- Family
- Friends
- Peers/colleagues
- Church/spiritual
- Primary Care Physician
- Exercises/sports
- Routines
- Alternative medicine
"C'mon, c'mon—it's either one or the other."
Think Outside of the Box
“Our regular program will not be seen tonight because you’re probably preoccupied with stressful thoughts about work and not paying attention anyway.”
Before Disasters:

During Disasters:
Wellness Skills

- Have periodic reevaluation of why you want to work with disaster victims
- Recognize and adhere to limits
- Have frequent consultation, formal and informal, with colleagues
- Utilize team approach
- Take adequate breaks
- Engage in pre-established appropriate stress coping skills
The Good News –
Human Resilience is the Norm
Resilience

- Confucius: “Our greatest glory is not in never failing, but in rising every time we fall”

- Nietzsche: “That which does not kill us can only make us stronger”
### Post-traumatic personal growth in the Katrina sample

<table>
<thead>
<tr>
<th>Change</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Became closer to loved ones</td>
<td>81.6%</td>
</tr>
<tr>
<td>Developed faith in ability to rebuild life</td>
<td>95.6%</td>
</tr>
<tr>
<td>Discovered inner strength</td>
<td>69.5%</td>
</tr>
<tr>
<td>Found deeper meaning and purpose in life</td>
<td>75.2%</td>
</tr>
<tr>
<td>Became more spiritual or religious</td>
<td>66.8%</td>
</tr>
</tbody>
</table>

Kessler et al. 2006
Post-Traumatic Growth Caveats

- Those who report growth do not necessarily experience it in all areas.

- The presence of growth does not mean the absence of pain and distress.

- As the losses become more overwhelming, the ability to adapt and cope may simply be overwhelmed, and the possibility of growth may actually diminish or disappear.

- Do not rush individuals towards growth.
Summary

- Post disaster psychiatric trauma has a complex etiology
- Post disaster psychiatric trauma is multifactorial
- Post disaster psychiatric trauma has variable course
- Ethnic, cultural, political, and economic factors may influence long term recovery and create differing goals
- Individual long term recovery must be community and public health oriented
- Move beyond lessons learned to lessons retained
Dear God,
Thank you for the treats we are about to receive!