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Lessons of Chernobyl and Fukushima: Integrating the Basics of Disaster Psychology in Medical Students' Curriculum.

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Enhancing Radiation Medicine Education.
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NATURAL VS HUMAN CAUSED DISASTERS: MAIN DIFFERENCES

Natural	Human Caused
Earthquakes, fires, hurricanes, floods, tornadoes	Chemical leaks, mass violence, terrorism, nuclear plants accidents
No one to blame	People, governments, or businesses to blame
Beyond human control	Seen as preventable and a betrayal by fellow humans
Advance warning is possible	No advance warning
Post-disaster distress is high and felt mainly by survivors	Post-disaster stress is higher than that of natural disasters and felt by more people not directly affected

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What radiological disasters have in common?

Church Rock, 1970

Chernobyl, 1986

Goiania, 1987

Three Mile Island, 1979

Tomsk-7 Complex, 1993

Fukushima Daiichi, 2011

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Radiation as Disaster Agent

Characteristics	Specific Effects
Invisible, insensible by human senses	Perceived as highly mystical and therefore especially dreadful
Penetrating	Causes a major in-depth damage to the human perception of safety
Complex (People normally know little about)	Causes the highest level of uncertainty and anxiety
No culmination, no end	Breaks human perception of time, causes destructive psychological defense
Deadly	Causes fear and distress of exceptional levels

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Cultural Dread or Why Do People Fear Radiation?

- Unknown threat
- Can not be seen or felt
- Conflicting information in mass media
- Contradictory data from different “scientists”
- Use of “radiation theme” in economical and political discussi
- Long term consequences of radiation exposure
- Lack of education among general public, physicians and othe
- Social understanding of any situation involving the term “radi

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Why Medical Students Should Know the Basics of Disaster Psychology

Mental Health Effects Indirectly Related to Radiation Exposure

- **Can far outnumber any direct effects**
- **Can affect hundreds of thousands**
- **Can last for many years**
- **Do not correlate well with actual exposure but with subjective perception of risk**
- **Protective actions to reduce exposure may be counterproductive with respect to such effects**

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Chernobyl and Fukushima: Major Social Consequences

- COMMUNICATION FAILURE
- BLAMING AUTHORITIES
- BLAMING THE VICTIMS
- STIGMATIZATION AND LABELING
- COLLECTIVE TRAUMA
- DISTRUCTION OF COMMUNITIES
- HIGHER SUICIDE RATE
- DISTRUST AND DISAPOINTMENT
- HIGHER SUBSTANCE ABUSE

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Chernobyl and Fukushima: Major Psychological Effects

- Irritability, anger
- Self-blame and self-agression
- Isolation, withdrawal
- Fear of recurrence
- Feeling stunned, numb, or overwhelmed
- Feeling helpless
- Mood swings
- Sadness, depression, grief
- Denial and other types of psychological defense
- Concentration, memory problems, confusion
- Relationship conflicts/marital discord
- Emotional instability
- Self-esteem decline
- Psychosomatic disorders

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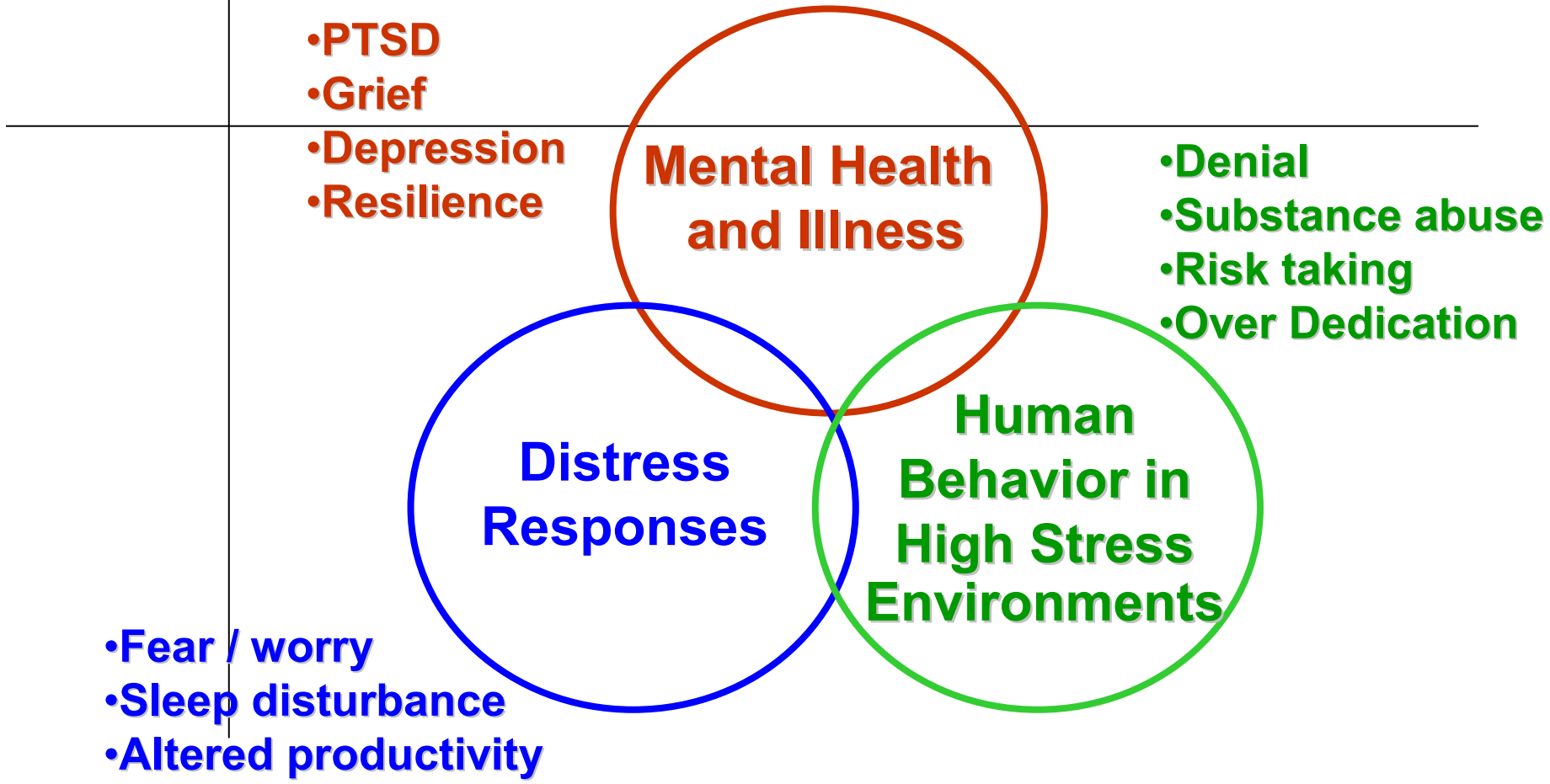
Categories of Reactions After Disaster



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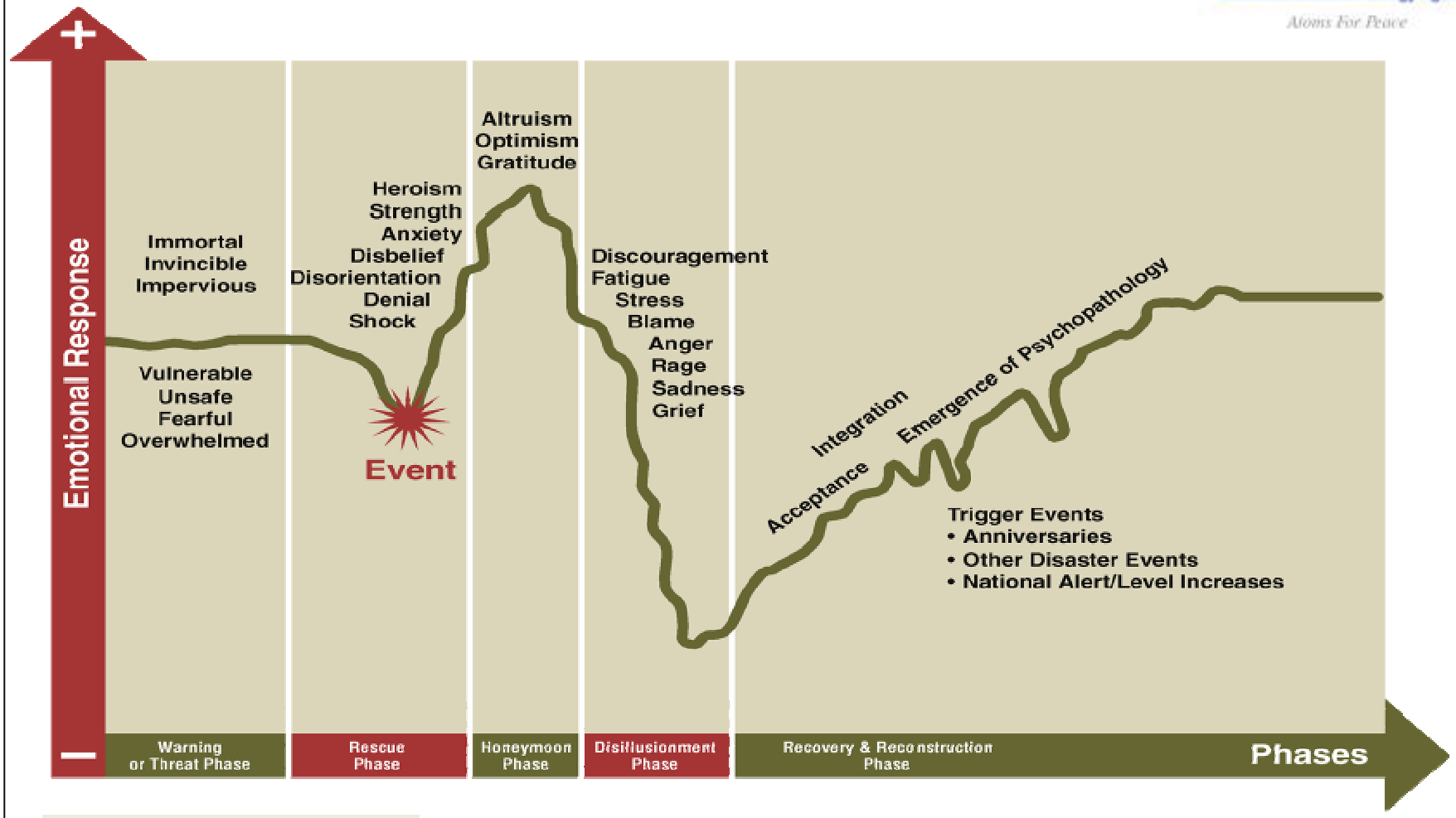
Psychological Response Dynamics



(Adapted from Zunin/Meyers)

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Challenges to Health Care Professionals (Helpers)

- Helpers are also exposed to disaster
- They may experience stress because of the work they do
- Often have a feeling of not having done enough
- Are sometimes overwhelmed by the needs of the community
- Need to cope with their own fears
- Are part of the collective crisis
- Repeated exposure to grim experiences
- Carrying out physically difficult, exhausting or dangerous tasks
- Lacking sleep and feeling fatigued
- Facing the perceived inability to ever do enough

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Challenges to Helpers (Cont'd)

- Facing moral and ethical dilemmas
- Being exposed to anger and lack of gratitude
- Being detached from personal support systems
- Feeling frustrated by policies and decisions by supervisors
- Feeling guilt over access to food, shelter, etc.

Helpers Need Knowledge and Training How to Help People Exposed to Radiation Disaster and How to Cope with Their Own Stress and Challenges

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COMPETENCIES FOR MEDICAL PROFESSIONALS AND PUBLIC HEALTH WORKERS

Emergency Management and Disaster Preparedness
Mental Health Consequences of Disasters
Disaster Mental Health Intervention and Planning
Psychology of Crisis Response
Psychological First Aid
Stress Management
Risk, Emergency and Crisis Communications

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LEVELS of PROFICIENCY FOR CORE COMPETENCIES

Level 1. "List" - **Knowledge:** The ability to remember previously learned material. Knowledge represents the lowest level of learning in the cognitive domain. This skill may involve recall of a wide range of material, from specific facts to complete theories. However, all that is required is recall of the appropriate information.

Level 2. "Describe" - **Comprehension:** The ability to grasp the meaning of material. This skill may be shown by translating material from one form to another (words or numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects).

Level 3. "Demonstrate" - **Application:** The ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories.

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LEVELS of PROFICIENCY FOR CORE COMPETENCIES (Cont'd)

Level 4. "Analyze" - **Investigation:** The ability to break down material into its component parts so that its organizational structure may be understood. This skill may include the identification of the parts, analysis of the relationship between parts, and recognition of the organizational principles involved.

Level 5. "Combine" - **Synthesis:** The ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relationships (scheme for classifying information).

Level 6. "Evaluate" - **Assessment:** The ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose). The student may determine the criteria or be given them.

Source: Academic Medicine, Vol. 80, No. 6 / June 2005

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Emergency Management and Disaster Preparedness – Learning Outcomes Summary

1. ***Disaster Types and Phases:*** **List and describe the different types and phases of disasters.**
2. ***Hazards Risk Assessment and Planning:*** **Explain the concepts and describe selected methods of hazards risk assessment and all-hazards planning.**
3. ***Response Functional Roles:*** **Explain the concepts of and describe functional response roles for one's profession, health agencies, and community members.**
4. ***Incident Command:*** **Explain the concept of an incident command system and describe its functional components.**
5. ***Integration with Emergency Management:*** **List and describe the members of the local emergency management system and describe one's role within it.**
6. ***Communication:*** **Explain the concepts of risk communication and describe the procedures for reporting possible disasters.**
7. ***Governmental Resources and Authorities:*** **List the governmental resources and outline the regulatory issues associated with emergency management and response.**

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Subject Areas for Emergency Management and Disaster Preparedness Principles

Competency subject area	School of Medicine	School of Nursing	Graduate School of Medicine	Graduate School of Nursing
1. Phases of disaster management	**Describe**	**Describe**	**Describe**	**Describe**
3. Response Functional Roles:				
a. Role of the citizen, community, volunteers, and various health sectors and agencies in disaster planning and response	Describe	Describe	Describe	Describe
b. Concept of disaster response functional role, and the disaster response functional role for one's profession	Explain	Explain	Explain	Explain
c. Ability to perform basic disaster response functional roles that are commonly used in one's profession	Demonstrate	Demonstrate	Demonstrate	Demonstrate

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THANK YOU FIR YOUR ATTENTION!
QUESTIONS

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