EUROPEAN CENTRE FOR PREVENTION
& FORECASTING OF EARTHQUKES

EARTHQUAKE PLANNING
& PROTECTION ORGANISATION

Prevention & Mitigation of the Psychosocial Consequences of Earthquakes

I.D. BERGIANNAKI - DERMITZAKI
Associate Professor of Psychiatry

Handbook No 4

MINISTRY OF ENVIRONMENT AND PUBLIC WORKS
ATHENS 2003

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FORWARD

Earthquakes are the cause of the most extensive destruction on our planet.

The psychosocial needs which arise as a result of a seismic disaster are considered worldwide to be of significant importance not only at the level of prevention, but also in terms of intervention for the affected population.

The various phases of a seismic disaster are accompanied by behaviours that concern different specialised areas of Social Science and Health sectors.

The contemporary objective of developed societies is the preparation and the adequate prevention and mitigation of all consequences, behaviours, and reactions resulting from an earthquake.

This handbook aims to offer a short description of the current knowledge pertaining to the essential prevention and confrontation of the psychosocial repercussions of earthquakes. It attempts to refer to all relevant aspects from the appropriate preparation to the education and training of the modern psychosocial interventions in an organised society.

In this short forward I would like to thank all the colleagues who collaborated with me during the long period of investigation into the psychosocial consequences of all kinds of disasters and particularly earthquakes in our country.

I particularly wish to thank my tutors, Professor C. Stefanis, member of the Academy of Athens, and Professor C. Soldatos, who have encouraged and supported me in this activity, and the OASP which sponsored the production of such a handbook.

Furthermore, I would like to acknowledge the noted of psychiatrist and lecturer Mr C. Psarros, parts of whose thesis I have used for this handbook. Finally, I would like to express my special thanks to Mrs. Avra Zarkou for her thoroughness in producing an accurate English translation of this handbook.

I hope, that this handbook will be useful to those dealing with the interesting subject of the prevention and mitigation of the psychosocial consequences resulting from a seismic disaster.

N. Bergiannaki-Dermitzaki

I. GENERAL INTRODUCTION

DISASTERS

Mankind has always found it self confronted by natural disasters that have often threatened its existence.
Initially, man made efforts to save his own life, later on the attempted to minimise his losses, and through a slow evolutionary process he has succeeded in becoming less vulnerable.

Modern man tries, with increasing success, to forecast and anticipate not only the immediate, but also the long-term consequences of natural disasters

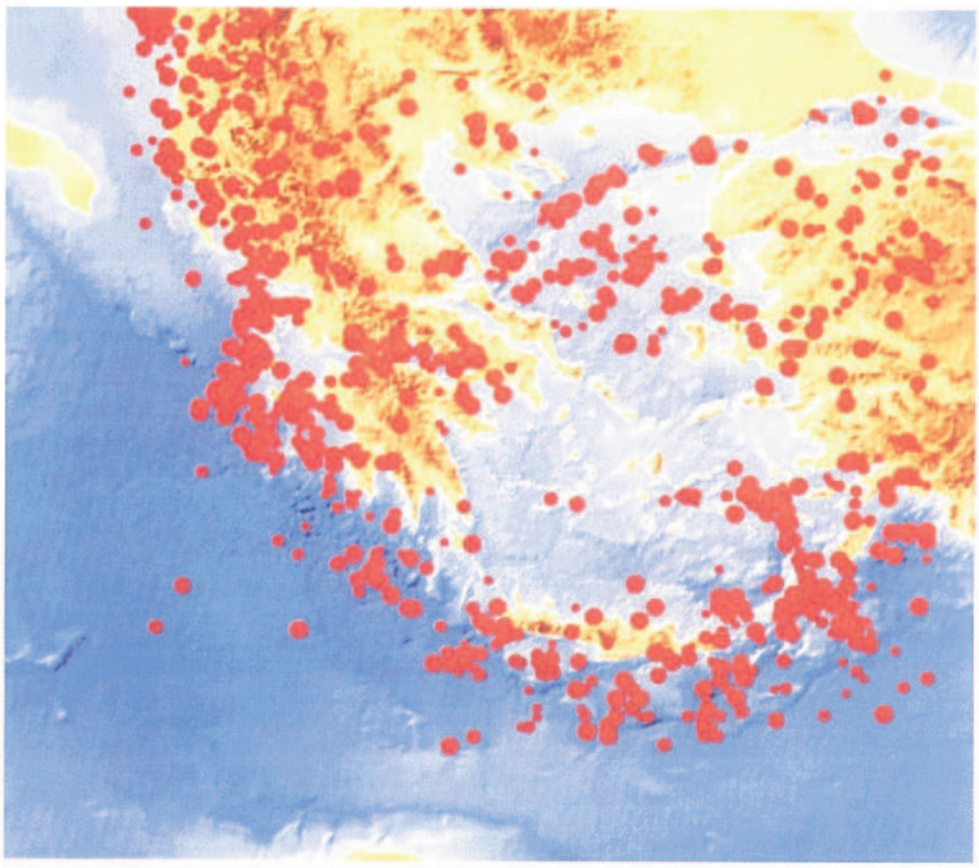
EARTHQUAKES

Earthquakes have always occurred and, according to prevailing beliefs and superstitions, they were often related to something swange and supernatural.

Even nowadays, earthquakes are considered by some people to be a kind of divine sign, or a punishment for their sins.

Earthquakes produce fear and insecurity like no other natural phenomenon

EARTHQUAKES IN GREECE



Greece is a region with a high level of seismic activity. During the last 200 years, there have been 40 earthquakes, which have claimed more than 10 lives.

Statistically, a devastating earthquake of such magnitude happens every 5 years, whereas the number of expected deaths is approximately 250 per five-year period.

During the last century, improvements in technical construction have decreased the number of deaths from 9.100 to 1.200.

CLASSIFICATION OF SEISMIC DISASTERS

According to one classification, disasters are differentiated into ***"natural"*** and ***"man-made".***

Depending on the **area extent,** and **magnitude** disasters are distinguished as ***"central"*** and ***"peripheral".***

A disastrous event is considered ***"peripheral"*** when it affects people that accidentally happened to be in a particular place and at a particular time (e.g. plane crash).

A disaster is classified as ***"central"*** when it affects the natural environment as well as the organisational structures and social groups of the society.

CLASSIFICATION OF SEISMIC DISASTERS

Earthquakes come under NATURAL disasters of CENTRAL type (Mass disasters)

DISASTERS AS PSYCHOTRAUMATIC EVENTS

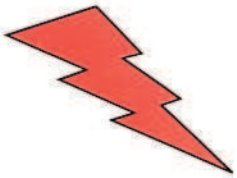
A psychotraumatic incident is defined as:

«.... a traumatic event which is outside the usual range of human experience, ... that would be disrassins to virtually every one, and the experience of which produces intense feelings of fear and helplessness, ... or presents a threat to ones life and personal safety, or presents a serious threat to the safety of his/her child or his/her partner, or other close friends or relatives, or sudden destruction of his/her house, or destruction of the society in which he/she lives..... and he/she experiences it alone or together with other people».

TRAUMATIC EVENTS AND THEIR IMPACT ON HEALTH

The way in which a person responds to a ***"traumatic event"***, travis ***"psychological trauma"*** from a seismic event, differs considerably from individual to individual.

Some of the ways disrness is induced by traumatic events are common to all disasters while, others are directly related to the type of the destructive factor.



THE EFFECTS ON HEALTH

THE RISK OF APPEARANCE OF AN PSYCHOLOGICAL REACTION

THE INTENSITY OF THE REACTION AND THE SYMPTOMS

Depend on:

the intensity of the trauma which is caused (stressor)

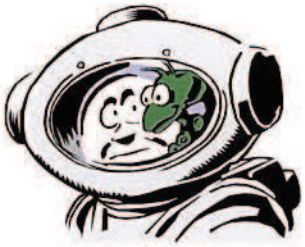
and are related to:

its type (i.e. special characteristics) and its intensity (strength)

FACTORS RELATING TO THE EFFECTS ON HEALTH

1) The "Mediators" of mental stress

The main mediators of mental stress are: the developmental background of the individual, his/her character, preexisting illness, a previous experience of an equally traumatic event, the environment in which the recovery takes place (support system and socio-cultural framework), the subjective estimates of the catastrophe (primary, secondary) and the significance of the event for the particular individual.



2) The social environment

In an organised society, the social environment usually provides care, support, comfort and encouragement. If this support system functions well, it has the capability of partially absorbing stress (stress buffering effect), while, at the same time, it provides an emotional shield that contributes to the development of the skills necessary to cope with the stress-producing event. This decreases the probability of repercussions for mental and physical health, because the key to resolve and relieve the "traumatic loss" seems to be the ability to share it with the wider social subset. The lack of social response facilitates the development of situations which strengthen the already existing intense stress. These situations act cumulatively and intensify the mental exhaustion, thus making the appearance of an individual and social psychopathology more probable.

3) The length of time that the individual has lived in a group having experienced a previous disaster.

DEFINITION OF SEISMIC DISASTERS

Seismic disasters are described as:

«... destructive events that hit suddenly, unforeseen, and without control, ... that threates or cause the loss of people and assets, and disorganise social life, involving undesirable psychological repercussions for the survivors»

**SEISMIC DISASTERS CONSTITUTE
MAJOR PSYCHOLOGICALLY EVENTS**

CHARACTERISTICS OF EARTHQUAKES AND THEIR RELATION TO PSYCHOLOGY

Earthquakes are sudden and cannot be anticipated

The victims of an earthquake experience a sudden and total change, from the complete calmness and normality to the uncontrollable and devastating fury of "Engelados"*.

Earthquakes are instantaneous

The acceleration of the catastrophic event is extremely rapid and usually lasts only a few seconds. The unforeseen and sudden appearance of the earthquake does not allow for any efficient protective measures to be taken. Therefore, earthquakes aggravate the psychology of the affected population. Furthermore, the damage caused by the earthquake occurs in this short time period, seriously affecting social coherence.

Earthquakes are beyond any control

It is impossible to have any control over earthquakes. No force known up to date can exert any influence on the progress of an earthquake. This fact intensifies the feeling of helplessness among victims who become involved in a catastrophic event exubiting of the magnitute of the «cosmogony».

Earthquakes affect extensive areas

Earthquakes have the capability to affect huge areas, resulting in extensive damage to the environment and many victims.

** Greek mythological demi-god responsible for earthquakes.*

Earthquakes do not have a visible substance

The destructive factor is not visible (clouds, rain, wind, storm etc). The cause of the disaster can only be felt. The lack of substance of the destructive force causes terror. When an earthquake hits, there is no possibility of escaping but only the obligatory exposure to an unverifiable seismic force that cannot be deterred.

Earthquakes are usually accompanied by aftershocks

The first intense seismic tremor is usually accompanied by aftershocks. These aftershocks have a variable and unanticipated intensity, at intervals ranging from few hours to several days.

This characteristic of earthquakes creates a multiplicity in the nature of the destructive event, and imposes continuous stress on the victims.

The uncertainty then increases and the recent psychotraumatic experience is aggravated.

Furthermore, the victims become discouraged from continuing creative activities to repair the damage.

At the same time, fatalism is encouraged and the process of repair, which leads to the **"recovery"** from the devastating **"trauma"** caused by the unpleasant experience, is slowed down.

GENERAL CONSEQUENCES OF EARTHQUAKES

Earthquakes are responsible for the most extensive natural disasters.

Devastating earthquakes often go beyond the loss of life: they also have a negative effect on socio-economics, as well as the physical and mental health of a great part of the population on our planet.

Earthquakes and their natural consequences (tsunamis, landslides, ect), have been responsible for the complete destruction of cities, cultures and important human achievements.

The economic cost of dealing with the repercussions of earthquakes is very high

The economic cost includes:

- **The expenses in order to repair material damage**
- **The funds allocated to the short-term relief of the affected population**
- **The medical care of victims**
- **The cost from the direct and indirect reduction of productivity in the affected area**
- **The cost of mitigation of the long-term consequences**

The cost of the long-term repercussions, as related to multiple sectors of personal and social spheres, cannot be precisely calculated. It seems however, to be much higher than that of the short-term ones.

TRAUMATIC CHARACTERISTICS OF A SEISMIC DISASTER

At a social level, a seismic disaster (as any other extensive destruction) has:

«.....damaging consequences for the usual behavior of people and causes dysfunction, or overloads the public services in the prevention and alleviation of the affected population»

Disastrous events influence society negatively in terms of:

- Its biological structure (survival, residence, health, reproduction)
- Its hierarchy and organisation (work distribution, constitutional hierarchy, cultural and social roles)
- The organisational motivation of its members
- Its system of values

The experience of a major disaster simultaneously involves two traumas: an *"individual"* and a *"collective"* one

INDIVIDUAL TRAUMA:

«..... A sudden and serious injury to the psychie of an individual, that exceeds his psychological defences and does not leave possibilities for essential responses»

COLLECTIVE TRAUMA:

«.....damage to the social web that shatters the interpersonal bonds and influences the sense of social solidarity»

In major seismic disasters these two types of trauma can occur independently, or merge into a continuous one

THE PSYCHOSOCIAL CONSEQUENCES OF A SEISMIC DISASTER

Destructive earthquakes are events that periodically subject the individual and his society to a kind of multifaceted stress.

They create a number of demands, which the individual and his society have to deal with.

A side from the loss of life, bodily injuries, and material damage, earthquakes cause various and sometimes serious, "Psychological and Social Reactions" which vitally affect the ***"Human System"*** that consists of:

- The individual
- The Family
- The Social group
- The Community

All of the above are interrelated and involved in continuous interaction.

The extent of the psychological stress on the "human system" of a society depends on:

Individual factors:	**• The individual characteristics of the victims**
	• The relationship between them
Social factors:	**• The affected social structure**
	• The cultural framework in general
Environmental factors:	**• The natural environment**

Thus, the psychosocial consequences of seismic disasters are determined by:

THE INTERACTION OF INDIVIDUAL, ENVIRONMENTAL AND SOCIAL FACTORS

PSYCHOLOGICAL REACTIONS TO AN EARTHQUAKE

The ***"extent"*** and the ***"quality"*** of psychological reactions to a destructive earthquake are determined by factors concerning:

- **The event itself**
- **The individual's characteristics**
- **The social environment**

EARTHQUAKES AND MENTAL HEALTH

Major seismic disasters as traumatic events cause serious repercussions for mental health.

The psychopathological reactions which occur after a devastating earthquake fall into two categories: those concerning "INDIVIDUALS" and those concerning "SOCIETY"

It is certain that almost all the people exposed to such a traumatic incident as a destructive earthquake will develop some symptoms.

Most people will respond in a "normal" way to an "unnatural" phenomenon (with a sense of its as unusual or exaggerated significance). The symptoms will be overcome and forgotten.

In other people however, the symptoms will persist and will constitute a source of chronic suffering.

The devastating experience, the psychological trauma it causes, as well as the time spent in activities dealing with its repercussions, may lead to the development of serious psychological consequences. On the other hand, it may be the case that such various post-disaster psychological problems probably preexisted and that the devastating event simply "made them surface".

During the first year after a destructive earthquake the general morbidity of the affected population reaches 30% - 40%.

This percentage decreases depending on the efforts made to cope with the consequences.

After the second year, the psychopathology is usually established and becomes chronic.

The disastrous event may also have positive results and involve tightening of the bonds between the members of the affected social group.

Furthermore, at the individual level, it may lead to the reevaluation of priorities, behaviors, activities and objectives, and may signal a radical and more positive change in their way of life.

Affected people quite often realise that they are capable of dealing with a ***"crisis"*** situation. This realisation gives them a sense of satisfaction and raises their self-esteem.

"VICTIMS OF" A SEISMIC DISASTER

Earthquakes, as central mass disasters, create "victims" regardless of sex, age, education, profession and socio-economic level.

From a psychological and psychiatric point of view, a "victim of a disaster" is an individual whose functions were normal before he/she experienced the sudden event the consequences of which had a negative effect on his/her ability to cope with and work through stressful situations

The victims of a disaster can be **"primary"** - individuals who experienced the destruction, and **"secondary"** - relatives and friends of the people affected.

When the disaster is particularly extensive and the consequences are terrible, the rescue workers frequently develop a psychology resembling that of the primary victims.

Experiences relating to recovering dead bodies, but also with the failure to rescue trapped victims, are particularly stressful for the members of rescue and aid teams, especially when those involved are children.

Compared to their professional colleagues, volunteers develop higher levels of stress similar to that of the primary victims.

CHARACTERISTICS OF THE VICTIMS OF AN EARTHQUAKE

The majority of the people affected by a seismic disaster, present some signs of physical injury coupled with a psychological strain, that they either ignore or deny.

Generally speaking, the psychological response to the psychological trauma varies among people. It seems that certain individuals are more susceptible than others to the psycho traumatic experience and its consequences and this, to a certain extent, depends on the specific meaning the disaster has for each individual.

The **"meaning of the disaster"** depends on the relationship between the event and:

- The past experiences of the individual
- The present situation
- His future expectations within his socio-cultural framework

PSYCHOLOGICAL CONSEQUENCES OF EARTHQUAKES

It is clear that the victims of devastating earthquakes experience intense physical and mental distress.

They have to adapt to a considerably modified natural environment, and to face the psychological distress caused by the loss of property, the possible injuries and the potential loss of life in their environment.

At the same time, they have to live for quite a long period in a situation of continuous vigilance and fear of strong aftershocks. These conditions intensify the direct psychological consequences of the disaster and create, at least theoretically, conditions for more permanent damage.

The coexistence of physical damage from injuries or accidents (which often happen during the earthquake), combined with the psychological pressure due to the disaster, increase the probability of the appearance of psychological and psychiatric problems

During the post-earthquake period, the appearance of psychological problems in a high percentage of the affected individuals is expected.

Two weeks after a devastating earthquake, whether in Greece or in the rest of the world, the percentage of people suffering from various forms of psychological distress can exceed 85%.

Three to six months later, the percentage decreases roughly by half. When compared to the general population, however it appears that they remain at relatively high levels for up to four years after.

TYPES OF POST-SEISMIC PSYCHOPATHOLOGICAL MANIFESTATIONS

The main diagnostic categories of mental disorders that may occur as a result of a major destructive earthquake are:

1) Acute Stress Reaction (ASR)

2) Post Traumatic Stress Disorder (PTSD)

3) Adjustment Disorders

4) Persisting Personality Change

5) Other Disorders

1. Acute Stress Reaction

Acute Stress Reaction (ASR) occurs after the exposure to an exceptionally distressing event or after an important change in the life of the individual leading to unpleasant conditions that last for a relatively long time.

This disorder usually affects a significant percentage of earthquake victims. Percentages recorded in Greece reach (and sometimes exceed) 60% of the affected population.

The symptoms that typify ASR are varied. The more characteristic ones are: a sense of "numbness", a shortening of the attention span, apparent disorientation, inappropriate or purposeless over activity, a feeling of being mentally tense, a feeling of hopelessness or despair, a feeling of detachment and depersonalisation, and symptoms of neurovegetative hyperactivity (tachycardia, dry mouth, perspiration, palpitations, etc).

The symptoms of ASR appear a few minutes after the earthquake, present a continuous transformation and usually remit after a few hours or in 2 - 3 days.

The remission of the reaction depends on the ability of the individual to cope with difficult situations, and on the amount of external help offered.

The quick diagnosis and prompt treatment of ASR are very important,
because individuals with sustained ASR after 48 hours,
- which seems to be rather common after a seismic disaster,
run a higher risk of developing
Post Traumatic Stress Disorder (PTSD)

2. Post Traumatic Stress Disorder (PTSD)

Post **T**raumatic **S**tress **D**isorder (PTSD) has been related to the exposure to a traumatic event and "...appears as a delayed or extended reaction to a traumatic event or situation (of varied duration) of an exceptionally threatening or devastating nature, and is likely to cause general distress to almost anyone ..."

The likely factors related to the onset of PTSD on the one hand hinder its diagnosis but on the other hand which relate positively to its time of appearance are:

- **The intensity of the psychological trauma**
- **Characteristics of the personality (introversion and neuroticism)**
- **The existence of a mental disorder in the family or in an individual psychiatric history**

PTSD develops during the first six months after the event with the possibility of a delayed onset, and causes serious disturbances in the social, professional, and other important functions of the individual.

Depending on the type of disaster, the disorder rates range from 3,6 to 75% in high-risk populations. After a huge seismic disaster (Armenia) percentages of PTSD reaching 88% of the affected population and lasting up to one and half year afterwards, were recorded.

In Greece, after a destructive earthquake which was not accompanied by a great loss of life (approximately 20), the rate of appearance and persistence of PTSD, between one and 6 years after ranged from 20 to 27%.

3. Adjustment disorders

"Adjustment Disorders", elements of intense malaise created during the adjustment process of the individual to the different conditions of life, occur and are combined with symptoms that arise from a coexisting emotional disturbance. The particular characteristics of the individual, as well as the readiness and the ability of the social environment to handle the new reality, naturally play of course an important role in dealing with the difficulties in the new life situation.

The disorder usually occurs one month after the destructive earthquake and is expected to abate approximately six months later.

4. *Persisting Personality Change*

This can occur autonomously or as a chronic and irreversible vestige of Post Traumatic Stress Disorder and it depends greatly on an pre-existing psychological predisposition.

5. *Other disorders related to postseismic stress*

- Generalised Anxiety Disorders (GAD)
- Physiological Responses
- Depression
- Substance, Alcohol and Drug Abuse
- Phobias

Among the psychopathological symptoms often reported by the victims which may occur independently, without being separate psychopathological syndromes, are:

- Mild Anxiety
- Irritability
- Hostility
- Mild Depression
- Physical Complaints
- Sleep Disorders

When gender and medical history, are taken into account women and individuals with pre-existing psychological problems present a more intense psychopathology.

SPECIFIC SOCIAL PSYCHOPATHOLOGY AFTER A DESTRUCTIVE EARTHQUAKE

The psychopathology concerning the society is as important as the individual one.

Its appearance is connected with the event itself as well as with the changes to the social and natural environment caused by the event.

SOCIAL FACTORS THAT CONTRIBUTE TO THE DEVELOPMENT OF THE INDIVIDUAL PSYCHOPATHOLOGY:

- Accommodation in makeshift compsites
- Compulsory eviction of the population
- A feeling of dependence on others (institutions of power and aid)
- General disorganisation of the social network
- Discruption of family harmony
- Inability to continue with usual activities
- Unemployment

FACTORS THAT INFLUENCE THE DEVELOPMENT OF THE SOCIAL PSYCHOPATHOLOGY:

- The experience of similar events in the past
- The ability and readiness of the social group to respond to the increased needs that have suddenly occurred

INDICATORS OF SPECIFIC SOCIAL PATHOLOGY:

- Increased use of alcohol, tobacco, drugs, and other substances
- Restricted interaction between members of the society
- Social isolation
- Persistent occupation with issues concerning the losses suffered (residence, possessions, social space), which acts negatively how aids the process of **"recovery"** from the trauma
- Family crises resulting from mental and physical distress, on the one hand, and from financial difficulties on the other. These can even lead to violent conflicts
- Friction in the relations between children and parents, stemming from the over - protective behaviour of the latter after the earthquake.

With time, the psychopathological manifestations usually subside and the social group moves on with restoring normality.

In cases of a complete or partial inability to repair the damage, the social psychopathology may become chronic.

This results in the deterioration of the initial psychopathology, in addition to delinquent behaviour involving an increase in crime and a breakdown in the relations with the law.

PREDICTIVE GAUGES OF PSYCHOLOGICAL MORBIDITY AFTER A SEISMIC DISASTER

- The degree of exposure to the threat
- The degree of exposure to the disorganisation caused by the disaster
- The gender
- The way in which each victim deals with the unpleasant experience

FACTORS THAT INCREASE THE MENTAL VULNERABILITY TO THE DISASTER

- The existence of another, possibly recent, traumatic or painful experience
- The existence of physical or mental illness, or severe disability
- The subjective estimate of the psychological distress experienced due to the disaster, along with the losses caused by it
- The lack of ability to cope with the disastrous experience
- The lack of social and psychological support
- A low socio-economic status

HIGH RISK INDIVIDUALS FOR INCREASED VULNERABILITY AFTER A SEISMIC DISASTER

- The elderly
- Children
- Individuals living alone (single, divorced etc)
- Pregnant women
- People suffering from a serious, chronic illness, or a severe disability

Moreover, those victims in denial and avoidance suffer more from psychological distress during the post-traumatic period.

Such individuals usually are:

- **Women**
- **Senior citizens**
- **Individuals without sufficient social support**

TYPES OF EXPERIENCES ACCOMPANIED BY HIGH STRESS DURING A SEISMIC DISASTER

- **Threat to life**

- **Physical injury**

- **Exposure to horrific scenes**
- **Violent or sudden death of a loved one**

- **Knowledge of exposure to toxic danger**

THE PHASES OF SEISMIC DISASTERS

Earthquakes, as well as major disasters of all types, include three main successive phases or periods.

1. The ***pre-disaster*** or ***pre-impact*** period' which includes the periods of ***"threat"*** and ***"warning"*** (if there is one)
2. The ***impact / disaster period*** that includes the phases of the ***"onset of the disaster"*** and the phase of ***"the emotional recoil"***
3. The ***"post-impact or post-disaster period'*** which is divided into

The ***"early post-impact period"***

The ***"later post-impact period"***

During these successive phases, the type of needs and the possibility to meet them, as well as the mental and emotional circumstances of the victims vary considerably

FACTORS THAT AFFECT THE ABILITY TO ADAPT DURING THE VARIOUS PHASES OF A SEISMIC DISASTER

Pre-disaster or (Pre-impact Period):

- Specific demographic characteristics
- Previous episodes relating to extreme stress
- Life events with small but frequent mental distress
- Psychiatric history
- Specific defence mechanisms
- Social Support

Disaster or Impact Period:

- Exposure to danger
- Cognitive appraisal of the exposure: the degree of execused control
  Possibility of prevention
  Extent of threat to life

Post-disaster or Post Impact Period:

- Initial level of distress
- Further stressful experiences
- Lack of resolutions
- Maladaptive psychological mechanisms of defence
- Insufficient provision of Psychosocial Help

BASIC CONCEPTS OF THE PSYCHOSOCIAL APPROACH AFTER A SEISMIC DISASTER

In the past, the psychosocial needs resulting from a natural disaster were considered to be secondary.

The modern approach recognises the importance of psychosocial consequences and points out the need for timely prevention as well as the short and long-term psychosocial care of the people affected

THE PSYCHOSOCIAL APPROACH:

- The psychosocial approach focuses on the behaviour of the individuals and their society during all the periods of a disaster
- It influences the patterns of post-disaster psychological morbidity
- It prevents the consequences in the first, second and third degree

THE AIMS OF THE ANTI-SEISMIC PSYCHOSOCIAL APPROACH ARE:

- The preparation of individuals and social groups to face a possible earthquake disaster
- The immediate alleviation of the disastrous event's short-term psychological consequences
- The investigation and the eradication of long-term consequences for the affected population

WHEN PSYCHOSOCIAL PROBLEMS
AND THE RELATED PSYCHOPATHOLOGY
DEVELOP, OR BECOME CHRONIC,
DEALING WITH THEM IS MORE DIFFICULT AND MORE EXPENSIVE

OBJECTIVES OF THE ANTI-SEISMIC PSYCHOSOCIAL APPROACH

The psychic trauma deriving from the earthquake influences mental structures and "produces" a cluster of emotions, thoughts and behaviours.

It causes a series of significant psychological and/or psychosomatic reactions, symptoms, dysfunctions and disorders in an individual.

On the other hand, the long-term threat of a major and destructive earthquake - particularly in areas of high seismic activity - exposes the individual and his society to a constent environmental danger which produces a permanent insecurity.

Psychosocial interventions aim at preventing the development of psychological, psychosomatic and psychosocial symptoms, reactions and/or disorders that usually follow major seismic disasters

ORGANISATION OF THE PSYCHOSOCIAL APPROACH

Organisation is very important because it contributes to the effectiveness of the social support system. Furthermore, it signals and determines the extent of dissolution caused by the seismic destruction to interpersonal and social bonds.

The organisation of the psychosocial approach to the consequences of the earthquake must be carefully prepared and consist of well-trained staff, who are ready to implement psycho-social intervention in any area hit by a seismic disaster.

The existence of the organisation should be obvious, demonstrable and widely known

THE EMERGENCY PSYCHOSOCIAL HELP PLAN

A suitable psychosocial intervention has to be included in any emergency plan. In areas of high seismic risk, these plans have to be logical, pragmatic and they have to cover all areas and phases of the possible disaster.

CO-ORDINATION OF THE PSYCHOSOCIAL APPROACH

In case of a destructive earthquake, the general co-ordination of the immediate psychosocial intervention is assigned to the Psychiatric Emergency Service (P.E.S). The P.E.S. (formed in advance, or locally synthesised) should have full administrative support, essential to the above responsibility.

The role of mental health professionals, who are commissioned by the Emergency Health Services, is to co-ordinate the institutions that will provide the psychosocial help and support and to schedule the time and method of relief provision

REQUIREMENTS OF THE PSYCHOSOCIAL APPROACH AFTER AN EARTHQUAKE

Destructive earthquakes require large interventions

Psychosocial aid should be given simultaneously to meet the three levels of needs:

- Individual
- Group
- Social

Psychosocial intervention requires:

- Specific knowledge
- Powerful, calm and self-confident leadership
- Up-to-date skills
- Time
- Money

For the psychiatrists and all the other mental health professionals, modern psychosocial intervention requires a complex psycho-medico-social role including interdisciplinary elements and concerning the various phases of a disaster

Preparation for psychosocial intervention:

Immediate psychosocial intervention uses all types of social specialists as well as local volunteers, in order to increase the aid networks.

The complex psychosocial approach requires preparation and includes the undertaking of specialised roles, which require special skills, in a range of activities from the level of planning to that of implementation.

The teams that will potentially be called to dale with the consequences of a seismic disaster ought to be informed before hand of their roles and responsibilities.

FIRST DEGREE PSYCHOSOCIAL RELIEF

In first degree relief of a disaster's psychosocial consequences, it is generally less likely that a psychopathology appears and develops in individuals and groups aware of the nature of the potential disaster, the degree of existing safety and the possibility to protect themselves promit.

The reactions of the social group as well as individuals are more intense, when there is no experience and thus, readiness for dealing with extraordinary or dangerous conditions

It is important that the public should be informed about the contingency of the psychosocial approach before, as a well as immediately after the earthquake.

This is very helpful for overcoming the consequences of the "traumatic event".

Prompt notification of the psychosocial intervention, as well as prompt interventions, are crucial

Despite the fact that the help provided might not be able to completely prevent the development of long-term disorders, the social and psychological support, when provided and communicated successfully, seems to play an important role in the way the individual responds to the stress caused by the disaster.

Recovery, after a seismic disaster is considerably influenced by the nature and the degree of the help provided (immediate and external) and varies during the various phases

GROUPS PROVIDING PSYCHOSOCIAL SAFEGUARDS AND RELIEF

- Mental Health Professionals
- National Government
- Local Government
- Relevant Institutions (Red Cross, Doctors of the World, Doctors Without Borders, Army, Police, Fire Brigade, Rescuers – professionals and volunteers etc)
- Various Social Organisations (Church, Scouts, Parents Associations etc)
- Members of the Mass Media

PROVISION OF PSYCHOSOCIAL RELIEF

Successfully providing psychological help to earthquake victims is crucial.

When in **"Crisis"**, most people respond easily and quickly to the support intervention. The same is true of the affected groups. Generally speaking, large groups of psychologicaly traumatised people, following extensive seismic disasters, respond very well to group approaches which are the immediate option. This facilitates the intervention that would be, otherwise, unfeasible because of the large number of people affected.

These group approaches, which verge on specific psychotherapies, can be relatively easily taught by psychotherapists to the relief workers, such as paramedics personnel of other specialties, and the various teams that have been formed in advance, or on the spot, immediately after the destruction.

CATEGORIES OF SOLUTIONS THE PSYCHOSOCIAL APPROACH AIMS AT

In every disaster the probable solutions should be evaluated (and help has to be provided) in these areas:

- Objective (property, losses, etc)
- Social situation (roles, work, etc)
- Personal characteristics (self-confidence, self-respect, etc)

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SECOND DEGREE PSYCHOSOCIAL RELIEF

As for the secondary relief of mental health damage and social psychopathology, it is important that psychosocial support should be provided by specialised professionals as close to the time and place of the disaster as possible, at the same time as medical care is given to the people affected.

THIRD DEGREE RELIEF

The third degree approach concerns a small number of cases and is provided by specialised personnel at a suitable time and place.

However, the knowledge of the causative correlation of the disaster with the appearance and maintenance of any syndromes or disorders resulting from it, is required in order to deal more fully and substantially with the psychopathological symptoms.

For the particular understanding of this concatenation the authorities responsible (even the experts) should be timely prepared.

RESEARCH

The immediate and long-term syndromes or disorders developed after a disaster and the related stress have not been fully researched.

The effective prevention of psychological reactions to the various phases of the different types of disasters requires continuous investigation and documentation. It also requires continuous special training and the assimilation of knowledge necessary to deal with them.

The management of research for the psychosocial consequences of disasters is included in the duties of specially sensitised teams composed of psychiatrists and professionals of various other specialties involved in the provision of mental health and social care.

PROS AND CONS OF THE PSYCHOSOCIAL APPROACH

The prolonged stress arising from an earthquake is due to the fact that the victims cannot substitute the losses with their own efforts.

Negative repercussions for mental health are expected when the state, community and social efforts dealing with the consequences of the disaster, are not co-ordinated, and the priorities are not those required.

In general, limited social support is related to problems that cause increased post-seismic stress, while high levels of social support considerably decrease any symptoms.

On the other hand, excessive, irrelevant or unskilled psychosocial help may increase stress because some of its mediators are reinforced by an inappropriate psychological intervention.

Moreover, the strengthening of psychological defence mechanisms that can be useful during the early post-impact period and should be then activated, if left unattended, could exceptionally worsen the "psychological solution" during the late post-disaster period.

PHASES OF THE SEISMIC DISASTER AND THE PSYCHOSOCIAL APPROACH

The various phases of the seismic disaster (pre-impact, impact, early and late post impact periods) are accompanied by special behaviours that can be characterised as appropriate or inappropriate as regards the adjustment to the event.

These behaviours have been partly studied by Disaster Psychiatry (or Psychotraumatology) and special techniques for their modification are reported.

The physical and psychological needs as well as the type of suitable approach vary, depending on the disaster period. Children for example, can benefit from group psychotherapy immediately after the disaster, while adults may need it at a later time, as they may first deal with issues of survival.

Only professionals with relevant knowledge and experience of similar previous disasters could give important information on the appropriate timing of interventions.

Nowadays, the role of the mass media proves to be quite important during all periods of the disaster sequence. The mass media, as well as, the press are called to participate and to help in every effort of psychosocial relief for the earthquake victims. This, however, requires that they should be timely informed and prepared on the meaning and the means of this approach.

A powerful, calm, and fully self-confident leadership, is required during all phases of the seismic disaster, so that reactions of psychological regression are prevented

LEVELS OF THE PSYCHOSOCIAL APPROACH DURING THE DEVELOPMENT OF THE SEISMIC EVENT

(Schematic model)

SEISMIC EVENT	
PSYCHOSOCIAL INTERVENTION	**AFFECTING FACTORS**
Not possible **(Good knowledge &** **previous education of the individual** **are only relevant)**	**TYPE OF DISASTER** (Characteristics of the exerted psychological pressure) **INTENSITY OF DISASTER** (Severity of the exerted psychological pressure)
POST-IMPACT PERIOD	
	MEDIATORS OF STRESS **INDIVIDUAL FACTORS**
Evaluation, **Identification of individuals and groups at high risk of developing immediate and later consequences** **Psychotherapeutic intervention (Individual, Group, Mass Media, Advisory, Specific)**	• Individual background • Personality profile • Subjective perception of the event (Primary and secondary) • Previous traumatic experience • Pre-existing illness
	ENVIRONMENTAL **(Environment of recovery)**
Organisation - Unfolding of psychosocial structures – Information (Governmental Institutions & Social Support Structures, Organisations, Professionals) **Approach** **(Governmental Institutions and Prefectural or Local Administration, Volunteers)** **Aid** **Appointment - Maintenance (Governmental institutions, Local Administration, External and Local Volunteers)**	Support System Social conditions Economic conditions Cultural heritage
	RESPONSE TO STRESS
Psychosocial and **Psychotherapeutic Intervention** **(General or specific)**	Physiological Behavioral Psychological
	CONSEQUENCES FOR HEALTH
Special Intervention	Biological Psychological Psychosocial

II. PRE-IMPACT (PRE-DISASTER) PERIOD

PSYCHOSOCIAL PREVENTION DURING THE PRE-DISASTER PERIOD (PDP)

The pre-disaster period includes the ***"threat"*** and ***"warning"***.

The **"threat"** is a period whose duration varies and during which, there is an increased risk of the occurrence of a seismic event.

In areas with high seismic activity and repeated tremors, this period can last for years.

The **"warning"** period could be vague and global, or specific and concrete.

With regard to earthquakes, there is no specific warning except for the rare cases when pre-earthquakes take place.

BEHAVIOUR DURING THE PRE-DISASTER PERIOD

Little is known about the behaviour of individuals during this period, because of the existence of relatively limited studies concerning the behaviour and cognition of individuals before an earthquake strikes.

The threat is usually denied by a majority of the people, or causes pointless, and sometimes harmful, hyperactivity.

Characteristically, although the residents of areas with high seismic activity live under a continuous threat of a new major earthquake, they not only deny it, but often rebuild makeshift structures on the ruins of the house just hit and destroyed (if there is no strict governmental supervision).

The rejection of sensible prevention is sometimes due to the rationale that the whole process will prove useless or excessive, while, in other cases, it is due to **"maladaptive"** psychological **"defence mechanisms"**.

According to these mechanisms, people cannot accept the fact that they themselves might be victims of a seismic disaster.

PSYCHOSOCIAL INTERVENTION DURING THE PRE-SEISMIC PERIOD

During the pre-disaster period, the main goal is the ***"preparation"*** of the psychosocial intervention in case of a major seismic disaster.

The relevant preparation has a double role. Its main role, however, contributes to the psychology of the members of the society, convincing them that prevention is taking place for their benefit.

Timely planning is the first priority in order for the earthquake consequences to be mitigated.

In such a plan, priority is given to those areas where the particular type of disaster is more probable.

PSYCHOSOCIAL INTERVENTION PREPARATION

The ***"preparation"*** for the psychosocial intervention in case of major seismic disaster focuses on:

A. Organisation

B. Training - education

Γ. Research

A. ORGANISATION DURING THE PRE-SEISMIC PERIOD (PSP)

A.1. Establishment of the psychosocial approach and formation of intervention groups (central and local)

- Groups of experts
- Groups of parents
- Groups of teachers (nursery – school – college)
- Groups of priests
- Groups of Community and Government workers

These groups could be formed:

- Centrally, from the relevant government services, or from the local authorities (invitation of professionals who will be committed to carry out specific tasks in case of an earthquake)
- Notification and appeals to the public in order to strengthen sector

Psychiatrists, as well as mental health and social services professionals of various specialities, have a crucial role in the formation and organization of such groups.

A. 2. Psychosocial approach plan development

Plans concerning the psychosocial approach incorporate in general the activities that are common to all cases of a seismic disaster. More specifically, however, the particularis of the specific area they are intended for, are described.

These plans include:

- The number of individuals required
- Their possible support
- The possibility for immediate mobilisation
- Alternative solutions for disasters of various destructivity
- The timing of the interventions
- The possibility of using every source of local help.

B. TRAINING DURING THE PRE – DISASTER PERIOD (PSP)

The special groups, as well as the individuals specialised in the prevention, intervention and mitigation of the psychosocial consequences after a destructive earthquake, undertake the training of professionals belonging to other specialities, and of non-professionals who are expected to be involved after a disaster.

Rescue professionals, volunteers, individuals from social services and organisations (army, police, firefighters, scouts, etc), should know the basics in Psychological First Aid and "Psychotraumatology", before being actually involved in the aftermath of a disaster

It is important that the mental health professionals should obtain the skills which will enable them to get organised immediately, and to supervise all activities that are likely to be developed.

As the psychosocial approach in the mitigation of the consequences of seismic disasters has not been implemented yet, psycho-social mental health and aid professionals have to be trained and educated in all nature of things needed for such enterprises.

These days, cells are created to evaluate the data collected up to date, and to draw up the basic guidelines for the creation of an organised psychosocial approach in our country.

The preparation and the specialisation of psychiatrists and of other mental health professionals in psychosocial intervention techniques, as well as the mitigation of the consequences of an earthquake disaster, are necessary

B.1. Specific knowledge about the psychosocial approach

The essential knowledge can be imparted with intensive seminars where the following points should be included:

- Elements of the Inter-disciplinary Psychiatry
- Elements of Psychiatric Traumatology
- Elements of General Psychotherapeutic Approach of Individuals and Groups
- Elements of Special Psychotherapeutic Techniques for Individuals and Groups in a post-disaster crisis
- First Aid
- Elements of organisation of tents and teams
- Elements of psychosocial intervention team co-ordination
- Basic elements of modern communication with the media and journalists
- Basic elements of successful television communication with the public via the media

B.2. Professionals who should receive psychosocial training (independently from the constitution of special intervention teams)

- Teachers (nursers, school-college)
- Doctors
- Nurses
- Firefighters
- Rescue teams
- Police officers
- Relevant civil servants (local government, relevant central government services)
- Priests
- Journalists
- Military personnel

B.3. Essential elements of the elementary psychosocial approach

- Usefulness of the psychosocial approach
- Expected reactions after a devastating earthquake
- Way of approaching the victims of seismic disasters
- Elementary techniques of psychosocial intervention provision

B.4. Creation of educational material

(Drafting of general and specific handbooks)

Specific handbooks:

➢ **School Handbooks**

- **For children of various ages**
- **For teachers** (eg "Help your pupil in an earthquake"). This type of handbook describes the expected reactions, as well as the techniques for their mitigation. Practical advice is given and methods for helping children express their emotions and feelings through stories, through role-playing that facilitates the comprehension of the destruction, and through the use of emotional debriefing techniques, are also described.
- **For parents** (of small children in particular), so that they are informed and able to support their children, facilitating the reorganisational mechanisms after the post earthquake reactions (eg "Help your child after an earthquake").

➢ **Handbook for communities,** containing all the psychosocial approach general information as well as specialised tactics for their particular duties.

➢ **Handbook for the media** containing the general and the specific role that is required of the media and journalists in the management of information concerning the seismic destruction. Apart from the facilitation of mass intervention, the damage that could eventually be caused from unsuitable, irrelevant or careless use of the press and television are also presented

➢ **Handbook for mental and social health professionals** explaining the specific approaches and mentioning the methods of training the various groups.

- Training and Education of families
- School Advisory Services
- Staffing of the Emergency Psychosocial Intervention help line after an earthquake
- Techniques of collaboration with other teams.

B.5. Training and preparation methods

- **Direct or personal approach** (specialised visitors present the information concerning the psychosocial approach to a seismic disaster, using functional and pleasing material - mainly audio-visual or short and lively speeches, in schools, organisations, public and private businesses).
- **Training – Education via intensive seminars.** These seminars can take place anywhere and can include groups with common characteristics, or be open to the public. It is obvious that the group formation determines the content and the manner of teaching.
- **General Information – Training via the mass media and the press.** Another successful way of direct and easy distribution of educational material can take place through the mass media. Specific broadcasts can be prepared, interviews with scientists belonging to the fields relevant to the seismic disaster and to the psychosocial intervention sectors, as well as talk shows, video clips etc.

B.6. Information - Briefing

The public has to be informed very early for any organisational and educational activity concerning the psychosocial approach.

Timely provision of information is positively evaluated by the members of the society and it contributes to the feeling of safety, which is important, in order to avoid the consequences of a seismic disaster

UTILISATION OF THE PRESS AND MEDIA

In serious and extensive disasters communication with the media, is absolutely necessary so that the public is informed about the psychosocial approach.

The local press and media have to inform the earthquake victims of any suitable interventions and how and where these are provided.

The information provided about a disaster should be meaningful and accurate checked in order for the briefing to be sufficient, without evoking excessive psychological reactions

Social intervention that can be provided by the media:

- Spreading information (useful, checked, general or specific)
- Consultation (by experts)
- Psychotherapy with large and open group techniques
- Clarifying and averting rumours
- Encouragement of the social group's identity and bond reinforcement

The contribution of the media (television, radio and press) is very significant whether it is positive or negative.

Positive contributions of the Press and Media in their handling of the disaster

- The media should encourage the psychosocial approach efforts
- Specific members of the special team ly-organised which consists of mental health professionals (psychiatrists, psychologists or specialised social workers) should be available to the television stations in order to answer questions about the expected or existing reactions to the earthquake
- Specially-trained psychiatrists (during the pre-disaster period) should advise the public and journalists on the way, earthquake victims should be approached
- Professionals in the various sectors of dealing with the disaster should be taught not to make, via the media, disturbing forecasts on the disaster and the reactions that could result. They should also avoid expressing in a very matter-of-fact way the eventual repercussions of the disaster, as well as mentioning reactions that may have scientific interest, but cannot be properly evaluated by journalists and the public
- The groups who faced a great demand for advice during previous disasters (schools, enterprises, hospitals, banks etc) should be mentioned

- The media should be used to present, in brief, the demands or problems of large groups. These groups should have access to the media
- Members of the community should be encouraged to detect the problems and to announce them to the media
- Participation in aid or restoration activities for friends and neighbours should be encouraged
- The development of new support teams that will contact the head team in order to co-ordinate, receive directives, participate in the work distribution, or expose their initiatives should be encouraged
- Meteorological forecasts should be aired regularly so that the affected are advised of weather conditions
- The media should be used to better identify the groups with common problems. Moreover, the media should detect these groups.
- Social support advice should be given
- The affected should be encouraged to spend time with elder ly-relatives, friends, neighbours and children
- The prevention and mental health treatment programmes that will be provided for individuals and groups should be advertised
- Discussions on these subjects should be transmitted at a time, when it is linely that families or groups are assembled
- Special therapeutic techniques should be presented in "Talk Shows" (if there are people available to demonstrate them)
- Treatment programs should be advertised

Negative contributions of the Press and Media in their handling of the disasters

Of course, there is always a negative side in the way the media report the devastating incident.

This side becomes particularly negative for the most vulnerable groups of victims.

- The repetition of the destruction experience, for example, increases the intensity of the reactions, and the most vulnerable part of the population, children in particular, are even more traumatised by what they see and hear
- The information is sometimes so intense and so focused on horrible incidents that even the people affected themselves are not sure of the size of the destruction that hit them and are bound to panic
- The extensive and repeated projection of footage from the destruction is likely to increase considerably on Acute Stress Reaction and worsen the overall condition.

Few things can be done to remedy this situation.

Some European governments tried to establish educational seminars for journalists on the way to approach and transmit information. Thus, only the journalists who had taken part in such seminars were eligible to cover the disastrous event. Such a method could be useful in regional destructions, but the size of a seismic disaster makes such measures impossible to adopt.

The best solution is to use the media both their positive and negative sides, make efforts to collaborate more efficiently with them.

C. RESEARCH DURING THE PRE-DISASTER (PRE IMPACT) PERIOD

During this period, the reinforcement of the various epidemiological, medical, psychobiological and psychosocial research (field studies, random, selective group studies etc) is of great importance.

It is useful to focus the research on the high-risk areas.

RESEARCH AIMS AT:

- "Demographic mapping". Recognition of high risk demographic factors leading to psychological or social reactions after a seismic disaster
- "Psychosocial mapping". Use of structured, or semi-structured questionnaires, as well as psychometric scales and interviews
- Pointing out the residual syndromes caused by previous catastrophes or by intense past seismic tremors
- The evaluation of the questionnaires used for the assessment of psychosocial characteristics by the Greek population
- The creation of new, versatile and brief questionnaires facilitating the immediate diagnosis of psychological and social reactions after a seismic disaster
- Pointing out the extent to which high-risk groups might develop psychosomatic and psychological reactions after a major earthquake disaster
- The discovery of the biological and psychological mechanisms causing post-earthquake stress
- The method of organisation and training of groups involved in the psychosocial intervention
- The documentation of social demands
- The comparison of the consequences of various types of disasters, accompanied by several losses (material or loss of life) and a varying number of victims
- Evaluation of programmes and their application of applied psychosocial help.

III. THE DISASTER PERIOD (IMPACT)

PSYCHOSOCIAL APPROACH DURING THE EARTHQUAKE PERIOD

This phase includes the ***"impact of the devastating event"*** and the time period immediately afterwards and is also called the phase of ***"emotional recoil".***

The main disaster period is the most frightening because it is associated with the intense and traumatic appearance of the disaster experience.

Individuals experience the destruction alone

The personal belief that normally dominates everyday life and concerns the ***"invulnerability"*** of the individual, is suddenly replaced by feelings of terror and insecurity intensified by the possibility of being physically injured or trapped in closed spaces.

The earthquake can change everything

In cases of very extensive destruction, reality suddenly becomes fiction and the familiar becomes unfamiliar.

The disaster disorientates and causes great anxiety for individuals.

Familiar places are no longer recognisable because of the disappearance of lighting, signs, or other means that up to then facilitated orientation and direction.

On the other hand, the great intensity of the earthquake, and its short duration which does not allow for an adaptation period, as well as the total lack of warning, are closely connected with psychological disorders produced by high levels of psychological stress and result in psychological weakening.

The time and day an earthquake hits, play an important role in the resulting psychological trauma that will influence mental structures with a cluster of sentiments,

cognitions, and behaviours that are released under the effect of biological, environmental and symbolic stimuli to which the individual is subjected at that moment.

BEHAVIOUR DURING THE IMPACT PERIOD

Behaviour during the seismic tremor

In general: 12-25 % of the people affected are expected to remain calm,

50-75 % seem frozen and afraid,

10-25 % display histrionic and confused reactions.

Serious panic reactions are quite limited and rather concern other types of disasters (e.g. fires) or earthquakes of exceptionally great intensity.

In Greece, during highly devastating earthquakes, almost half of the affected population reports that they demonstrated

"appropriate behaviour",

and only 16% reported

"dangerous or inappropriate behaviour".

It appears that individuals develop an adaptive behaviour related to the level of previous training, or previous similar experiences.

The rescue of earthquake victims depends on their behaviour. The lack of self-control, especially if accompanied by paralysing fear or stress behaviour can prove fatal.

Previous education (informative seminars, special simulation programmes etc), as well as training on how to deal with similar emergency situations, proves to be crucial to survival.

Behaviour immediately after the earthquake

A number of individuals, perhaps one quarter of them, demonstrate exceptionally calm and reasonable behaviour. A very small number of individuals are unable to act, and the majority of the victims present decreased cognitive faculties.

Sometimes, personalities become caricatures, e.g. histrionic individuals tend to suffer ***"nervous crises"***, and while repressed individuals demonstrate ***"heroic"*** behaviour.

Most individuals behave in between the two extremes.

They generally know what they should do in the early phase of psychological reorganisation and reconstruction, but at the same time they are subjected to all the symptoms of mental and autonomous nervous hyperactivity.

As a response to the psychological pressure, callousness may also be developed, as another characteristic syndrome of this period.

Psychological callousness partly explains the self-destructive exposure of some victims to greater danger and injury.

On the other hand, and while most victims are found between extreme emotions and reactions, it is imperative to decide whether to rapidly remove them from the scene of destruction, or leave them there, in order to help the people around them.

As a general rule, the behaviour of victims is characterised by unselfishness and altruism.

They make efforts in order to save or help those around them: sometimes, this can be characterised as heroic, that is why this phase is called ***"heroic phase"***.

Behavioural control during this phase of destruction can be achieved with the passive imitation of the leaders

FEELINGS

The earthquake causes a lot of intense and negative feelings.

The state of denial that characterised the pre-disaster period is replaced by an imminent threat of death for the individual himself and his loved ones.

Thus, during and immediately after the earthquake, all those affected are afraid and worry about what might happen to the people close to them, and more than half of them experience an intense fear of death.

During the early post-disaster hours, and while the victims are seeking shelter for themselves and their families, they are dominated by feelings of helplessness, absolute weakness, iminent donges, fear, worry, stress, sadness, anger, offence, mistrust, psycho-motor retardation, emotional withdrawal hopelessness.

REACTIONS

During the earthquake, the victims experience an intense physical and mental ordeal (stress), which causes a series of important psychological and physical dysfunctions. An significant increase in the victims' stress levels, exceeding the maximum normal limits, is also expected. The response to stress is further accentuated and the victims feel "an inability to think" which disorientates them greatly. The same happens to the individuals and the teams (who are themselves also victims), which have been prepared for and are in charge of dealing with the repercussions of an earthquake.

Practically, all the people affected are expected to show some form of physical or non-specific type of reaction. Psychological, most individuals show reactions between the two extremes (freezing and panicking) that are symptoms of the autonomous neurovegetative system: fear, stress, anger, lack of confidence, denial or short periods of psycho-motor retardation and sentimental withdrawal. The initial and transitory reactions demonstrate the mental alarm and outcry.

More than 60% of individuals showing some reaction are expected to develop a mild to serious Acute Stress Reaction (ASR), related to the intensity of the fear of death felt during the earthquake, the amount of stress, and their predisposition to develop further stress.

INDIVIDUALS AT RISK OF DEVELOPING ASR

- Anxious individuals
- Individuals having suffered a previous experience of a strong earthquake
- Individuals having suffered a loss of residence
- Individuals having suffered important household losses
- Individuals having suffered a loss of social environment
- Individuals with serious health problems (currently or in their medical record)
- Individuals having suffered injury during the earthquake
- Individuals with the tendency to develop psychosomatic symptoms

INDIVIDUAL SYMPTOMS

Almost everybody exposed to a frightening event will present certain psychological, physical or psychosomatic symptoms. This is considered a "normal" reaction to an "abnormal", out of the ordinary and dramatic experience. It is also called ***"disaster syndrome"***, and lasts from the first hours to a maximum of the first two days after the earthquake.

The more common psychological symptoms of this type of stress are shock and the feeling of numbness.

The symptoms of "mental shock", immobilisation, withdrawal and avoidance are more common to those individuals that "freeze" psychologically and are incapable of acting, because no response is possible or useful.

Insomnia is very frequent in about 70% of the individuals having experienced a major disaster and, when it appears, it contributes to a slower disappearance of the remaining symptoms.

Among the common physical symptoms, increased blood pressure, various physical symptoms coupled with an increase in the neurovegetative mood because of stress, have been reported.

Because of this neurovegetative hyperarousal caused by acute psychological stress during the earthquake, it seems that the disturbances to cardiac rhythm increase the risk of infarction episodes and there is an increased risk of cardiac death, 2-3 days afterwards.

Compared to men, women present more symptoms that are also more intense.

The intensity of initial symptoms is an important warning for more permanent post-seismic reactions.

If the symptoms do not recede, despite the support and information given, they should then be treated pharmaceutically.

PSYCHOSOCIAL AID DURING THE IMPACT PERIOD

- There are urgent needs in the first post-disaster day, which are very important for any further psychosocial approach. Therefore, whatever was done during the pre-disaster period is judged in the first post-seismic hours.
- The first social aid is provided by the victims of the earthquake themselves until the services rescue arrive.
- Organised help for the victims and estimates of the damage are provided later.
- People affected by a devastating earthquake are in desperate need of assurance that they are safe.
- They need help in order to handle their acute stress and to receive a psychological solution for the pressure of the traumatic experience.
- Each of them should be presented with the opportunity to tell their story at least twice, and to share their experiences with experienced helpers, who are also good listeners, so that their intense feelings are diffused.

REQUIREMENTS DURING THE IMPACT PERIOD

- Immediate satisfaction of material needs (tents, food, water, clothes, lighting)
- Immediate determination of the material and psychological needs in the particular conditions and the particular region (urban, rural, industrial, constitution of population, etc)
- Quick re-establishment of social contacts (family, relatives, work, church)
- Immediate care for people with special needs (injured, old people, children, psychiatric patients, invalid etc).
- Efforts to immediately restore (be it basic) communication systems, transportation, and social services
- Mass media and press assistance so that those least affected help their relatives and neighbours. This will also fulfill people's need for control and self-esteem.

  (It is worth noting that, after a disaster, some types of personality can offer better help than others, although this is not related to their previous work or behaviour, but with the particular characteristics of their personality)
- Provision of adequate information. However, the use of the mass media and the press should be limited because experiencing again the events via television and radio as well as transmitting fear, can greatly increase the already existing reactions. The information that should be provided during this phase must encourage as much as possible calmness, a realistic response to trauma, and mild optimism. In some European countries with developed organisation of psychosocial approaches it is required that the disastrous event

be only covered by journalists who have previously attended seminars on the psychosocial approach

- Maintenance of public order so that the community is strengthened and the repercussions for the psychosomatic health of the affected people are limited
- Mobilisation of all the psychosocial intervention institutions and services and notification of appeals for volunteers
- Relevant use of radio, television and the press
- Good communication with the mass media, that should be established during the pre-disaster period.

TACTICAL PSYCHOSOCIAL INTERVENTION DURING THE DISASTER PERIOD

During this period, the psychosocial care can be provided immediately in the first emergency shelters that will be created.

However, the best way to approach those who have suffered the greatest damage or losses is by door-to-door intervention.

An early intervention is very powerful and it can help prevent long-term problems.

Moreover, immediate information and the reassurance of the victims of the existence of organised psychosocial help are of critical importance.

The efforts being made in order to deal with the psychosocial repercussions should be announced immediately.

This tactic considerably strengthens the people affected so that they mobilise their own forces in order to deal with the repercussions of the catastrophe.

During the acute phase of a disaster, as well as immediately afterwards, special psychiatric intervention is not necessary.

The local psychiatric personnel could treat the very few individuals with acute psychiatric problems.

During this period, the psychiatrist has the role of co-ordinator, supervisor and psychotherapist.

Special psychiatric intervention is only needed in cases of obvious psychopathology and should then be very discreet.

IV. THE EARLY POST-DISASTER PERIOD (POST-IMPACT)

PSYCHOSOCIAL APPROACH DURING THE EARLY POST-IMPACT PERIOD (EPP)

The early post-seismic period begins 24 to 48 hours after the destructive earthquake and lasts 5-6 months.

This period is subdivided into two phases accompanied by different behavioural features:

a) The very early phase called **"the honeymoon phase"** which begins the day after the seismic event and lasts 2 to 3 months maximum.

b) The final or **"disappointment period"** or **"illusion period"** during which it is realised that many of the changes could be permanent

BEHAVIOUR DURING THE EARLY POST-IMPACT PERIOD

As soon as the immediate ***"disaster syndrome"*** remits, the victims develop a completely different image corresponding to the ***"post-disaster honeymoon"*** period. This period is characterised by:

- Optimism
- Intense activity of the people affected in order to re-settle
- Increased expression of sentiments (affected people become talkative)
- Increased readiness to exchange thoughts, experiences and expectations
- Development of dependent or regressive (infantile) behaviour
- Small group formation where the people affected feel secure and are able to freely express their emotions and their expectations for damage compensation
- Behavioral disorders which cause changes to the daily habits (routines)
- Behavioral disorders which cause changes to diet, exercise and mobility
- Expression of rage and/or aggressiveness mainly against the local and state authorities, but sometimes also against the rescuers and other helpers.

GENERAL PSYCHOPATHOLOGY DURING THE EARLY POST-IMPACT PERIOD (EPP)

The general psychopathology consists of:

- Typical psychological reactions of stress, fear, sadness, threat, anger, lack of confidence in the authorities, denial, short periods of psycho-motor retardation and of emotional withdrawal.
- Development of several physical complaints deriving from the hyperactivation of the autonomous nervous system (neurovegetative) and expressed by physiological and/or various psychosomatic disorders.
- Increased use of tobacco, coffee, drugs, alcohol and other substances. Psychopathic and other delinquent behaviours could also be developed, although this is rare (at least in Greece).

During the early post-disaster period, the symptoms are related to the extent and quality of the psychosocial help provided

During the "initial phase" of the early post-seismic period, the reactions / symptoms expected are, as follows: (1st-4th month)

- Significant increase of stress levels not only in the individuals but also in the affected population as a whole
- Appearance of certain psychosomatic reactions in the whole of the population. During the last part of the adaptation phase, a characteristic increase in physical symptoms such as frequent headaches, nausea, diarrhea, vomiting, muscular pains, vertigo, sweating and general lassitude are also reported
- The non - **"specific symptoms"** (shock, lack of concentration, continuous irricability and difficulty sleeping) are often more intense than the physical reactions
- Women are expected to present increased ***"autonomous hyperactivity"*** symptoms (tachycardia, butterflies in the stomach, sweating, tremors, dry mouth), ***"abdomen and the thorax"*** symptoms (difficulty in breathing, pain or discomfort in the chest, nausea or

abdominal discomfort), ***"mental"*** symptoms (dizziness, instability, fainting, a feeling that things are not real-"derealisation", a feeling that the self is not actually here-"depersonalisation", fear of losing control or conscience, fear of death), as well as ***"general symptoms"*** (feelings of heat or cold, numbness or a tingling sensation)

- Approximately 60% of earthquake victims or 80% of those who developed an Acute Stress Reaction (ASR) during the impact period tend to further maintain the symptoms (a fact that characterises earthquakes in contrast to other types of natural disasters).

During the final phase of the early post earthquake period the following are also expected:
(5th-6th month)

- A progressive stress reduction (for the individuals and the population as a whole). Stress levels, however, remain higher than the pre-seismic ones
- An increase in the percentage of individuals who feel anger and rage as well as abandonment by the authorities
- A reduction in the tolerance for disappointment, an increase in the formulation of complaints, a remarkable loss of humour, and in certain cases, an increase in an almost paranoiac kind of mistrust towards the efforts being made
- Weeks or even months after the traumatic event, a dramatic increase in visits to general practitioners with physical complaints
- Increase of problems in the family, the economic situation, and the social environment
- Perception of significant deterioration of the quality of life compared to the pre-seismic one
- Appearance of an early **P**ost **T**raumatic **S**tress **D**isorder (PTSD)*
- It is expected that women will complain more about stress and depression symptoms, while, men have a tendency to use a greater amount of substances and present problematic behaviours

** PTSD is found in higher percentages among individuals who had economic problems before the earthquake and generally report more problems in various sectors afterwards (family, work, economic status), have high levels of stress, presented an intense ASR immediately after the earthquake, and maintain intense and pathologically increased psychosomatic reactions)*

PROBLEMS DURING THE EARLY POST-IMPACT PERIOD (EPP)

This period's problems mainly depend on:

- The changed living conditions
- The short and middle term consequences of the destructive earthquake on the health of the people affected (physical and mental)
- The family relationships
- The social relationships
- The economic status of the people affected
- The professional status of the people affected

PSYCHOSOCIAL ACTIVITIES DURING THE EARLY POST-IMPACT PERIOD

The activities developed during this period are related to:

- Continuation of help provision to the people affected
- Final estimate of the damage suffered
- Recording and dealing with the various problems that come up as time passes
- Repair of the material, physical and psychotical damage suffered

GENERAL APPROACH DURING THE EARLY POST-IMPACT PERIOD

The main goal and concern of any type of intervention is to deal with individuals and groups, who an hour ago, were probably in a higher and better physical, mental, socio-economic and cultural condition than that of those in charge of organising the aid.

Respecting the personality of the earthquake victims and being discreet, while providing help, is required.

Psychosocial intervention is not a charity.
It is a social necessity.

PURPOSE AND GOALS OF PSYCHOSOCIAL INTERVENTION DURING THE EARLY POST-IMPACT PERIOD

During the early post earthquake period efforts are focused on dealing with the needs as well as on the ***full recovery*** and ***convalescence of:***

- the individual
- the family
- society in general.

The psychosocial intervention enterprise has four parts:

1) **General intervention related to the current problems**
2) **Direct psychosocial support (Help line)**
3) **Consultation – Educational activity**
4) **Programs for schools, organizations and corporations**

WORK OF PROFESSIONALS WHO PROVIDE MENTAL HEALTH CARE DURING THE EPP

The professionals who provide mental health care aim at restoring the victims' mental balance to what was before the event.
The work of professionals in the field of mental health care is very important during this period and aims at:

- The organisation of special tents in every major temporary shelter where the social and psychological approach will be planned and implanted
- The formation and supervision of psychosocial intervention teams at various levels
- The prioritisation of psychosocial care
- The organisation and guidance for the immediate support of the people affected in a psychologically protected environment

- The formation of a group or groups in order to deal with children and adolescents
- The identification and care of individuals or groups who are at high risk of developing post disaster disorders
- The encouragement of self-help support group creation among the earthquake victims
- The encouragement of a psychotherapeutic exchange of experiences among the affected people
- The organisation and operation of a direct psychosocial help line
- The communication with the media and the supervision of a mass intervention via the media and the press

The provision of any essential help for the people affected presupposes the correct *"hierarchy of needs"*

HIERARCHY OF NEEDS

CREATION OF MASS TEMPORARY SHELTERS

Each local government, particularly those in regions of high seismic risk, must have investigated, planned and announced during the pre-disaster period, the sites suitable for mass temporary shelter creation.

The creation of these temporary shelters as well as the intended situation, must be immediately announced by the media (or in any other way appropriate to the occasion).

RE-ESTABLISHING CONTACTS

As soon as a safe survival is ensured, contacts (family, work, church) should be restored.

Contact with the immediate family must take priority. In case of an extensive catastrophe, when private communications (particularly in big cities) are not possible, these must be established in collaboration with the media (mainly the radio and the press), or with special teams that will help in this process.

PSYCHOSOCIAL APPROACH AND INTERVENTION

As long as the physical and basic needs have been covered, (or their coverage is in progress) the psychosocial approach is sought, aiming at the development of self-control, self-esteem and at dealing with the individual and social psychic trauma caused by the destruction.

CREATION OF TENTS WITH SPECIAL SIGNS

These tents are erected in every major temporary shelter, or in the central shelter of the affected region. They are distinct (with special signs) and easily accessible.

It is obvious that a large number of such tents are involved in the destruction of a city with a large population. In smaller regions, tents can be limited to the necessary numbers.

GENERAL PSYCHOSOCIAL SUPPORT STAFF TENT

During the first days after the earthquake, the senior psychosocial intervention staff will stay on a 24hour basis. Later on, the shifts can be reduced.

Electricity, the availability of telephone communication, and the availability of communication with the media should be provided in this tent as soon as possible.

PSYCHOSOCIAL INTERVENTION TENT

The team of general social support is based here and initiates their programme of daily on the spot intervention.

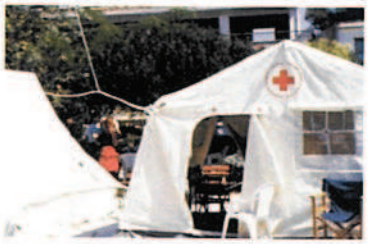
TENT FOR THE ELDERLY

Specialised personnel from centres for elderly people, social workers and volunteers are based here.

This tent is necessary for the first days (to few weeks) after the disaster.

In case the earthquake has destroyed the existing infrastructure, the tent can be used for a longer time.

TENT FOR PEOPLE WITH SPECIAL NEEDS



This tent is the base for members of social services as well as medical personnel, who find solutions to deal with the needs resulting from the chronic problems of individuals with infirmities, or chronic diseases, in case the earthquake has caused damage to the existing infrastructure and cannot momentarily function.

TENT FOR PSYCHIATRIC PATIENTS

Specialised personnel are permanently on duty in this tent. Such a tent (or tents) are needed when the local psychiatric institutions have suffered damage and evacuating them by transferring the patients to their relatives homes is impossible.

TENT FOR THE PSYCHOSOCIAL APPROACH FOR CHILDREN AND ADOLESCENTS

Special intervention programs concerning these ages as well as the various educational events are also organised in this tent (or tents).

TENT FOR FOREIGNERS

If there are a lot of foreigners, refugees, or workers who are not native speakers in the impact area, a special tent is set up where individuals speaking the language of the majority are based.

TENT FOR INTERVENTION WITH RESCUERS AND VOLUNTEERS

Specialised professionals able to diagnose and deal on the spot with the mental strain and depression caused by the rescue enterprise are based in this tent.

The individuals dealing with the rescue (professionals but mainly volunteers) must visit this tent regularly (every 4-5 hours) to receive support and counselling (especially if there are many dead).

Ideally, in this tent also are experienced personnel allocated by the professional rescue teams in order to deal with their own members.

TENT FOR THE ORGANISATION AND DISTRIBUTION OF EDUCATIONAL AND INSTRUCTIVE MATERIAL ABOUT THE SEISMIC DISASTER

This material has already been prepared during the pre-disaster period (at least in the high seismic risk regions) and is ready to be distributed. (see: pre-impact period)

In case this material has not been prepared, a qualified team should design, write and distribute brief and appropriate texts.

TENT FOR COMMUNICATION WITH THE MEDIA

Trained psychosocial intervention staff (a psychiatrist or psychologist as well as a social worker), with essential knowledge, previous experience, but also the ability to efficiently handle the media and communicate through them, are based in this tent.

TENT FOR RELIGIOUS PURPOSES

When the destruction has damaged the buildings where religious rites are performed as well as the possibility of direct and unhindered contact with priests, the existence of such a tent in major shelters is necessary.

Apart from the priests, individuals commissioned by the church to meet the needs of the direct psychosocial help, should also be based here.

PSYCHOSOCIAL APPROACH AND INTERVENTION

CREATION OF SPECIAL PSYCHOSOCIAL INTERVENTION TEAMS

The mixture of various teams of psychosocial intervention should be avoided because the seismic destruction causes different problems and grouping individuals with different needs increases the already existing stress.

It is good that individuals with similar backgrounds and similar devastating experiences be grouped together, because this facilitates the exchange of experiences.

Some of the teams for psychosocial intervention as well as their tents are useful during the first days after the earthquake. Their creation is necessary to restore the concepts of ***"organisation"*** and ***"care"*** that are completely disrupted after a devastating earthquake.

Guaranteeing these "symbolised" concepts as well as demonstrating them increases the confidence of the people affected in the social team and automatically decreases the feelings of threat, stress and loss that is felt.

The intervention teams that are created during this period should also be installed in tents, or other safe and relevant spots.

There are two types of teams. Those who practise an approach or intervention of general type and those who have specialised roles.

TEAMS FOR GENERAL AND SPECIFIC INTERVENTION

TEAMS FOR GENERAL INTERVENTION

- Team for General Co-ordination
- Team for Psychosocial Support

- Team for psychological help for the injured
- Team for dealing with death-related incidents
- Team dealing with elderly people
- Team dealing with people with special needs
- Team dealing with foreigners
- Team dealing with rescuers
- Team managing educational material

TEAMS OF SPECIAL INTERVENTION

- Team for intervention in psychological crisis (crisis intervention)
- Team for psychosocial intervention using special techniques for the alleviation of individual and collective mental trauma
- Team organising and operating the direct psychosocial helpline
- Team for communication with the mass media
- Team dealing with psychosocial problems in children

GENERAL CO-ORDINATION TEAM

This team interacts with community institutions, social services, law and order officials, the media and other auxiliary services, in order to co-ordinate the special activities aiming at psychosocial intervention.

This team is also in continuous contact with the other teams of psychosocial intervention and co-ordinates their actions.

The volunteers coming to receive instructions, or to report their role in the affected region, also collaborate with this team .

Included in the members of the team are at least one psychiatrist and one child psychiatrist as well as recommended individuals from parapsychiatric, medical, or paramedical specialties. It is appropriate to also include social scientists as well as members of local and central government and experts on disasters (particularly seismic disasters).

GENERAL PSYCHOSOCIAL SUPPORT TEAM

This team is composed of mental health professionals (psychiatrists, psychologists, specialised nurses, social workers, social scientists and specialised volunteers).

Social support can take place in a special tent or in the Red Cross or other medical care organisation tents. It is appropriate to include some general practitioners. Psychiatrists that are not familiar with general medicine should be based in tents with colleagues from other medical specialties.

The team processes the general situation and informs the people affected about the reactions they will probably experience. The earthquake victims want to hear that the stress, the insomnia and the over-excitement are normal responses to the traumatic event and that they will recede.

The team also advises the victims and the temporary assistants on the techniques, that should be followed in order to develop adaptive psychological mechanisms.

Looking for the individuals at high risk of developing post-traumatical disturbances is also one of the responsibilities at this team. These efforts also include the provision of door to door (or tent to tent) services, depending on the circumstances, the urgency of demands and the number of the people affected. During this period, it is useful and necessary to establish communication with the people affected, because, later on, mechanisms of introversion and aggression are developed impeading access.

TEAM FOR PSYCHOLOGICAL HELP FOR THE INJURED

This team deals with the direct psychological aid of the injured along with their medical and pharmaceutical care. It is usually located near hospitals, health centres, or tents where first aid is provided.

Moreover, members of this team try to locate individuals, whose injuries are not serious, but who probably need psychosocial intervention.*

The psychosocial approach of the injured averts feelings of helplessness or abandonment and thus, avoids a large percentage of the negative psychological repercussions of the injury. At the same time, assurance that society is providing substantial aid is given.

* *A common mistake in such circumstances is to abandon the injured after the immediate medical care provided. The injured mobilise effective psychological defense mechanisms in order to face the event, but it is precisely those mechanisms that might impede their psychological development and make them impressively more negative and hostile to the next intervention. It is worth noting that if these individuals are not given support when needed, they are more vulnerable and may present post-traumatic stress disorders.*

TEAM DEALING WITH INCIDENTS INVOLVING DEATHS

This team has the responsibility of notifying a death to the relatives, or participates in this notification. It also helps the family mourn, and finally, accept the loss. This approach is important because "frozen" bereavement, or the inability to deal with what has happened, can lead to the development of psychosomatic disorders, feelings of chronic lassitude, prolonged depression and chronic sleep disorders.

The relatives of the dead who have suffered a nervous breakdown or who are overwhelmed by grief must be given group psychotherapy, regardless of their age.

TEAM FOR THE CARE OF THE ELDERLY

After the disaster, the elderly are usually withdrawn from the social group, and become isolated; they often avoid seeking any help, while feelings of sadness, helplessness, hopelessness, and lack of interest for the future overcome them. The lack of perspective that they sometimes feel is probably due to the realisation that the time they have ahead of them, in order to rebuild their life, is limited. After a devastating earthquake, the elderly should be approached on the initiative of the team dealing with their problems and they should be looked for in their homes or in the tents where they are settled.

TEAM DEALING WITH PEOPLE WITH SPECIAL NEEDS

Doctors, psychologists and social workers participate in this team.

TEAM DEALING WITH FOREIGNERS (WORKERS, REFUGEES E.T.C)

This team calls for foreign volunteers that have the ability to help and support their compatriots - under guidance. Because of the expected psychological regression, it is important that the affected foreigners should be able to communicate in their mother tongue and to communicate with home (if possible). This is crucial within the framework of modern care.

The team basically takes care of the victims' problems, as well as making arrangements for their special customs or necessary cultural rituals to take place (religious ceremonies, morning burils, etc).

TEAM DEALING WITH THE RESCUERS

The professionals that constitute this team are very useful in diagnosing those individuals, who have been excessively or dangerously over loaded by the rescue missions so as to be able to immediately intervene with the "debrieling " method, or with other special psychotherapeutical methods at an individual or group level.

All the individuals that have taken part in rescue operation are monitored for stress reactions during the post-disaster period.

CONSULTATION AND EDUCATION TEAM

This team organises and co-ordinates the people dealing with these types of help for the affected and it takes care of the distribution of special material.

This includes, brochures, handbooks or even newspapers that describe the symptoms of traumatic stress and are distributed to the people affected. A brief mention of ways of self-help, the use of the direct helpline, the services provided by the teams of psychological help, as well as the ..... of operation of all services offered, should also be distributed.

TEAMS OF SPECIAL INTERVENTION

TEAM FOR PSYCHOLOGICAL «CRISIS INTERVENTION»

In a suitable and safe environment, this team applies the various therapeutical methods that aim at developing interpersonal contact and at encouraging verbalization.

Verbalization helps to neutralize the painful experience, especially if this was particularly intense, dangerous and fragmented.

TEAM OF EXPERTS PROVIDING PSYCHOTHERAPEUTICAL INTERVENTIONS TO DEAL WITH INDIVIDUAL AND COLLECTIVE MENTAL TRAUMA

This team is particularly useful in all types of disasters.

Only specialised psychotherapists conduct the interventions of this type. Among the various techniques used, the most well known are **"Debriefing", "Mini-Marathon",** the **"Flooding"** method, and **"Systemic Desensitisation".**

The "Debriefing" method as well as the "Mini-Marathon", have the advantage that they can be applied to large, heterogeneous and open groups.

If the community that has suffered the destruction is large, a large number of psychotherapists are probably required in order to reach schools, churches, businesses and organisations that may show interest in such an approach.

TECHNIQUES OF INTERVENTION

BASIC CONCEPTS OF "DEBRIEFING " TECHNIQUES

The psychotherapist encourages the victims to face the destruction through conversation, which seems to be the most common and successful method of dealing with the psychological consequences of destruction.

The goals of "Debriefing" psychotherapies are:

- **Confirmation that the entire community has suffered a trauma and that it is in the course of overcoming it**
- **Vocabulary provision for the expression of feelings. (This technique decreases the sense of isolation and helplessness probably felt by the victims)**
- **Detailed conversation about each symptom and explanation of them with examples taken from the daily routine**
- **Normalisation of the emotions felt by the individuals**
- **Pointing out warning signs of eventual psychological stress reactions that require particular attention**
- **Training of the victims in order for them to realise when emotional responses can become destructive and when they should get professional help**
- **Training of the audience in simple methods of self-help for the alleviation of psychological pressure. The listeners are obliged to speak to each other about their feelings, experiences and remarks. This description of feelings allows them to re-experience the event in a safer environment and among people who they trust, who survived and who felt exactly the same things**
- **Description of various forms of self-help**
- **Encouragement for the people affected to dedicate extra time for leisure, reduce their demands from work and the re-establishment of their home, and lower the standards that burden them with responsibilities. Lowering standards is an advisable protective mechanism in cases of intense pressure**
- **Encouragement and strengthening of the community**
- **Distribution of reports and information on the sources and possibilities of psychological help**

BASIC CONCEPTS OF THE MINI-MARATHON TECHNIQUE

The mini-marathon session includes three parts of equal importance:

1) Narration of stories that concern the incident
2) Narration of the symptoms
3) Narration of positive stories, future plans and solutions

The goal of the psychotherapeutic "Mini– Marathon" session, which lasts three hours, is to reach out to a large group where all the participants are encouraged to speak.

The main goal of this approach is to deter the growth of a symptom.

Also efforts are made to rouse the individuals that feel psychologically "numb" and intensely worried. The psychotherapist attempts to help the group "resolve" their feelings of shame and the concealed stress reactions.

- The Session can take place anywhere (in a tent, a room or outdoors) and it includes individuals that have been exposed to the same experience: the group can then eleborate on their common experiences.
- The group is open and the members are allowed to come and go whenever they wish.
- The participants can be from 4 years of age to the very aged.
- Children under 4 can be present but they will not be asked to speak.

The specialised "Mini – Marathon" psychotherapist accepts and ratifies all the sentiments that may be expressed by the people affected.

The psychotherapist must not express rage, enthusiasm or despair. The terrible events may cause many types of responses, including empty sentiment, lack of apparent emotional response, lack of interaction, distancing from the event, apathy and even psychopathic deviation.

TEAM OPERATING THE EMERGENCY TELEPHONE HELP LINE (E.T.H.L) (Special Telephone Line)

This telephone line is necessary for the first 15-20 days and initially functions 24hours a day.

It constitutes the social "ear" for the problems created by the earthquake.

The calls become fewer after the second post-seismic week.

The personnel consists of psychiatrists or very specialised psychologists and changes over every 3-4 hours.

The most appropriate people for the staffing of the Direct Telephone Intervention Line (DTIL) are mental health professionals that have worked in the affected region.

INDIVIDUALS USING THE ETHL

The telephone line provides help for individuals, who are good speakers of the local language and want to keep their anonymity. Individuals with mental problems, who avoid direct communication because of psychopathological reasons or social biases (stigma), also fall into this category.

The majority of the individuals using this telephone line are women inquiring for themselves or for their children's reactions. Various fears, types of stress, sleep disorders, gastrointestinal problems and types of depression are usually expressed in these calls.

PUBLICISING THE E.T.H.L

- The telephone number of E.T.H.L. has to be announced very often by the media
- An analysis of the usefulness of such an intervention has to take place regularly
- Individuals who have a history of psychiatric complaints, receive psychiatric treatment, have suffered previous psychological traumas as well as elderly people with mobility problems, are particularly encouraged to use this line
- Parents whose children present certain changes in their behaviour are encouraged to use the line

- A special line for children of school age and adolescents could also be created, which could be advertised through the media and schools
- More individuals, homme volunteer (groups), who are from the local community or from other regions, are also invited to staff the unit.

TEAM FOR COMMUNICATION WITH THE MEDIA

Specially educated psychiatrists (from the pre-disaster period) adorse via the media, journalists and the public the appropriate approach of earthquake victims. The determined members of this special team of mental health professionals (psychiatrists, psychologists or specialise of social workers) have to be available in order to answer questions from the public and journalists about the expected or existing reactions to the earthquake.

- The professionals dealing with the repercussions of the destruction should make carefully formulated forecasts concerning the extent of destruction and the reactions that can result.
- Expressions with very intense wording concerning the possible repercussions of the destruction, as well as forecasts for reactions that can have scientific interest but cannot possibly be evaluated by journalists and the public, should be avoided.
- Discussions on these subjects should be transmitted when it is expected that the family or the team are assembled.

PSYCHO-SOCIAL TEAM FOR CHILDREN AND ADOLESCENTS

A child psychiatrist and psychologist, special parapsychiatric personnel, a teacher, a kindergarten teacher, social workers and representatives of institutions involved in education must participate in this team.

Children are particularly vulnerable after a mass seismic destruction because they do not have the maturity to comprehend and process events, and thus react with behaviour changes, sleep disturbances, phobias, lack of interest and a drop in their school performance.

The team has to encourage parents to dedicate more time to their children. Until restoration work has started, parents can spend time to get closer to their children in order to help them talk, express their fears, but also to feel the comfort of family love and protection.

This team also undertakes the special school **programmes**.

SCHOOL PROGRAMS

One day school **programs** should be developed immediately after the disaster.

Parents, in collaboration with the specialised psychiatric and parapsychiatric personnel (educational and psychotherapeutic), attend the first part of these programs where they are encouraged to ask questions. The subjects of these programs are mainly focused on the children's stress response, on separation stress (from the familiar environment), on sleep disturbances and on the role of the media.

During these psychotherapeutic meetings, it is good to organise activities for the children, while the adults meet to discuss.

The activities which are suitable for children in these type of meetings are drawing books on the theme of earthquakes, «booktherapy» (the use of books which have as their theme children overcoming difficult situations), **programmes** of art and games. Other similar approaches include questions based on pictures, which resemble the disaster as well as other ideas, using familiar techniques from child psychology.

Games, art and writing are meant to deal with the children's concerns as well as to change their attitude towards life, at present and in the future.

TECHNIQUES FOR INTERVENTION WITH CHILDREN

Child intervention techniques should be dictated by special child psychiatrists and psychologists and be supervised by special educational personnel.

Three models or intervention techniques that can be used immediately after the destruction in large groups are reported. These are:

- Psychotherapy techniques for large and open groups including all ages
- Education interventions for children
- Psychotherapeutical techniques via the media (radio, television)

For children of pre-school age in kindergarten and nursery school, games appear to be more effective than discussions which could become a source of intimidation. A common game is that of the representation of the destruction where role playing (children that represent the earthquake, the buildings, the human figures, the furniture, the assistants, the rescuers etc) appears to help in stress reduction but also in the awareness of the situation. Games about injury take place under supervision in order to prevent involuntary repetitions of the traumatic issues without resolving the fear.

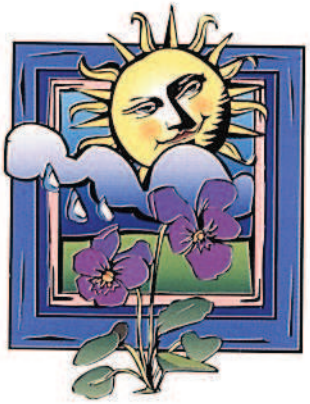
After the seismic experience, children should learn in an appropriate way that the world is potentially dangerous, events cannot be foreseen, life can end suddenly and untimely and that bad luck exists, but does not dominate life.

Schoolteachers, who already have a relationship with the children, are very important and they can have a therapeutic effect on the majority of the children.

Finally, if the nightmares, the bad school record and the regression to childlike behaviour persist, the need for professional help is then obvious.

V. LATE POST-DISASTER PERIOD (POST-IMPACT)

PREVENTION AND MITIGATION OF THE PSYCHOSOCIAL CONSEQUENCES DURING THE LATER POST-DISASTER PERIOD (LPDP)



The late post-disaster period can be positive if the parameters that determine the resolutions of the individual and social psychopathology dominate. It will be negative if these parameters contribute to the long-term maintenance of the psychopathology.

The parameters that influence the psychological outcome depend on the personal characteristics of the affected individuals, the existence of a supporting social environment, the interest shown by the local and central administrative authorities in charge of the interventions of the general problems, which have now become chronic.

It is natural, as time passes, for new problems to keep emerging and, as long as the earthquake victim's expectations are not met, for some of them the post-disaster period will last for the rest of their life.

Such a development is called ***"second disaster".***

PSYCHOPATHOLOGY DURING THE LATE POST-DISASTER PERIOD

The psychopathology usually encountered during this period mainly concerns ***"Post Traumatic Stress Disorder, or PTSD".*** Its development ranges from 10 to 88% and relates to the extent of the disaster, the degree of losses, and the level of the provided help.

Other expected psychopathological disorders, in smaller percentages however, are: ***"Generalised Anxiety Disorder", "Depression", "Panic Disorder",*** various ***"Sleep Disorders"*** and ***"Enduring Personality Change".***

The co-existence ***(comorbidity)*** of two or more psychiatric disorders in the same person, after the psychotraumatic experience of a destructive earthquake is frequent.

Generally, the development of anxiety syndromes seems to be caused by the threat of a new destruction, while depression accompanies the perception of serious material losses from the earthquake.

EXPECTED REACTIONS DURING THE LATE POST-DISASTER PERIOD (LPDP)

The expected course of reactions during the late post-seismic period is as follows:

1. Decrease in accommodation related problems
2. Restoration of the perceived quality of life
3. Recession of solitary symptoms and various psycho-somatic reactions developed during the early post-disaster period
4. Considerable recession of the stress developed during the early post-disaster period at the individual but also at the social level. (In some cases, stress will be maintained for a longer time or even permanently at levels higher than those reported before the disaster)
5. Feelings of malaise, avoidant behaviour in situations that remind of the earthquake, excessive fear reaction to exterior stimuli, reduction of attention and concentration and hypervigilence, would remain for a long time, even years, after the disaster, although they tend to recede
6. Loss of confidence in the authorities due to the insufficient and contradictory information provided during all the phases of the disaster.

ENDURING POST-DISASTER PSYCHOLOGICAL REACTIONS REPORTED IN THE GREEK POPULATION

In areas with a high seismic activity such as the Egialia (Aegio), mild and isolated but persistent psychological reactions were observed in figures exceeding 70% up to 6 years after a destructive earthquake.

Among the main persisting reactions are:

- Malaise
- Avoidance of situations that remind of the earthquake
- Various sleep disorders
- A sudden recall of the seismic event without reason
- An excessive fear reaction to external stimuli
- Manifestations of hyper alertness
- Outbreaks of anger and rage.

Moreover, about 1/3 of the people affected present a mild avoidance of multi-storied buildings and lifts, maintain the post-seismic increase in smoking and coffee consumption, while an important increase in alcohol or any other addictive substance consumption is not observed.

Feelings of suspicion and wariness increase and are maintained in high percentages while, on the other hand, social life, particularly among elderly women, is restricted.

In earthquakes with extensive material damage but few human victims, the existence of Post Traumatic Stress Disorder (PTSD) is expected to reach percentages of 10-30 %, which seems to remain stable at 6 months after the earthquake.

MAINTENANCE OF STRESS DURING THE LATE POST-DISASTER PERIOD

Repeated signs indicating the persistence of the hazard provoke an **increase of symptoms** that have been receding after the destruction.

Aftershocks, even small intensity ones, cause and rekindle great stress in the population

When the people affected by an earthquake disaster feel exposed to a long-term danger, they present more symptoms, and excrete more cateholamines (epinephrine and norepinephrine) for at least one year afterwards.

Appetite's increase or reduction, sleep disturbances, feelings of insecurity, hyper-excitability and anger are some of the characteristics of chronic stress. Independently of the development of any kind of psychopathology, prolonged stress influences people's motives, attention, ability to concentrate and thus, performance.

To a certain extent, experiencing chronic stress appears to be independent from the provision of social support, although support plays an important role in the type and intensity of the individual's response to the disaster. Although social support can definitely alleviate mental and physical symptoms, as well as behavioral reactions, it cannot completely prevent stress development.

Adjustment to chronic post-seismic stress is expected after 5 years, either because the individuals adjust biologically, or because the visible danger recedes considerably and psychological denial is developed.

CHARACTERISTICS OF INDIVIDUALS AT RISK OF MAINTAINING AN EVENTUAL POST-SEISMIC PSYCHOPATHOLOGY

- Women
- Existence of chronic illness and long-term pharmaceutical treatment
- Existence of chronic psychological and psychiatric problems
- Existence of sleep disturbances
- Existence of recent serious illness/complaint that the individual connects with the earthquake
- Increase of medicine consumption
- Existence of "sufficient" stress (above average norm)

- High "Neurotisism" as characteristic of the personality
- Reduced social life
- Change in the relationships with colleagues, as well as with the authorities
- Low satisfaction with the general quality of life
- Loss of a relative in a disaster or an accident.
- Low level of education

MITIGATION AND ALLEVIATION OF LONG-TERM POST-SEISMIC REPERCUSSIONS

The late post-seismic period is also the pre-disaster period for an eventual earthquake.

Thus, apart from the special care that concern this period, all the social efforts required for a satisfactory social prevention at the level of pre-seismic preparation should be continued *(Refer to corresponding chapter)*

Dealing with long-term post-seismic repercussions covers three basic areas:

A. Psychological and Psychiatric consultation and care

B. Psychosocial approach

C. Research

A. PSYCHOLOGICAL AND PSYCHIATRIC CONSULTATION AND CARE

A1. Creation of permanent ***"special centre"*** in order to deal with post-seismic or post-traumatic symptomatology in the psychiatric clinics of General Hospitals, or in Psychiatric Institutions (Mental Health Centres, Psychiatric Hospitals, etc).

A2. Regular press and media announcements concerning the existence of these special medical centres that will consult on and deal with any **post traumatic** symptomatology. The precise address or the telephone numbers are always mentioned in the announcements

A3. Information for victims (given by local or government services, the media and/or the press) that, after a major devastating event, some reactions that need to be faced may remain. (On occasion of commemorative days, the characteristic symptoms and reactions that result in the development of **post traumatic** reactions or syndromes are publicised).

A4. Encouragement of the population via the local press and/or the media to attend the specialised centres dealing with the post-seismic disorders.

A5. Publication of short, functional and attractive handbooks including all the essential information.

A6. Utilisation of the media and the local press by mental health and social services professionals. These should not be selected because of the simple fact they are acquainted with journalists or producers of "live sensationalist shows", but they should be experienced and knowledgeable on the subject so as to communicate efficiently with the public and create a feeling of safety and confidence.

A7. Child psychology and psychiatry specialists seek out those children showing signs of post-seismic disorders. Special care should be given to those children whose living conditions have not been yet restored to their pre-earthquake levels (children accommodated in tents, trailers, containers or other make-shift shelters)

A8. Discreet care, (through social services or other social structures) should also be given to individuals who, during the immediate **post seismic** period, showed intense reactions, belonged to the high risk population, or had developed an early psychopathology (extended bereavement, depression, post-traumatic stress disorder, or some other type of psychopathology). The individuals who will maintain PTSD in the long term can be detected during the early **post disaster** period and can be sought during this phase (very discreetly!!) so that the relevant support be provided to them.

A9. Follow up reports and attempts to detect the prolonged reactions, mainly avoidance type ones, of the people affected (door to door approach if the size and the population of the affected region permits).

A10. Special psychological and psychiatric care should not be imposed under any circumstances! Special help is provided only to the individuals who seek it themselves.

B. PSYCHOSOCIAL APPROACH AND CARE

The first year of the late post-seismic period is very important because of the anniversary (commemorative) situations that arise. The community and the social organisations (institutions) as well as the Service of Psychosocial Approach get prepared to deal with the social repercussions.

B1. Organisation and preparation of ***"traditional memorial days"***. These days are timely announced so as to become widely known.

B2. Attempts are made so that the relatives of those dead and/or injured during the seismic disaster are personally approached.

B3. Media shows that will give the opportunity to the people affected to rekindle traumatic feelings developed during the catastrophe and not yet overcome, are also prepared.

B4. Events and informative shows take place dealing not only with the explanation of the seismic phenomenon but also with the real danger that an earthquake entails.

B5. The individual and social measures that have to be taken in order to face a new seismic incident are announced. (This should by no means be presented as a threat but as an organised and protective report).

B6. Similar events are conducted in schools where the appropriate educational and informative material is distributed. School visits of an informative and pedagogic type have to be organised by specialists or professional rescuers.

B7. Original learning methods and familiarisation of children with earthquakes are promoted (including games, films, artistic events, projects on the topic of the earthquake, historical data, simulators, narration of personal experiences etc). These various programmes have to be supervised by Child Psychiatrists and Child Psychologists.

C. RESEARCH

The scientific knowledge on the long-term consequences of major, destructive earthquakes is still insufficient and requires further investigation.

Data collection methods are presented in more detail in the chapter dealing with the pre-seismic period.

An effective prevention and mitigation of the psychological reactions and the psychosocial consequences as well as the special training to face the latter presuppose a continuous documentation

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