IDENTIFYING POST-DISASTER PSYCHOLOGICAL REACTIONS AND POSSIBILITIES TO REDUCE POTENTIAL DAMAGES

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Disasters can endanger and harm people's lives, health and properties, the basic living conditions of the population, the natural and built environment, and natural values. Therefore, one should always calculate with some kind of an accompanying psychic effect. It is important to deal with the analysis and presentation of psychic phenomena shortly or long after the disasters. In the present article, we are attempting to present a comprehensive summary of the issue. After systemizing the causes of disasters and the features of incident sites, we identify and map the expected psychic consequences, searching for protection options and solutions. The article discusses the psychological effects of terrorism as well.

Keywords: disaster area; extreme weather; crisis intervention; psychological phenomena; post-traumatic stress disorder.

Introduction

According to IFCR[1], a disaster is a "sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses" (IFCR n.d.), disrupting the normal conditions of existence (WHO 2002). A disaster is a sudden and severe unfortunate event, as well as a natural or man-made event that has a negative impact on life, property, livelihoods, or industry, often causing permanent changes in human societies, ecosystems, and

[1] The International Federation of Red Cross and Red Crescent Societies (IFRC) is the world's largest humanitarian network.

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the environment (Kai 1978) (Gibbs, et al. 2022). A disaster is a rarely occurring, unexpected disturbance that upsets the social order (KREPS and BOSWORTH 1993) i.e. disasters are social phenomena (Sjoberg 1972) with significant psychological effects (Bland, et al. 1996). According to the definition in item 5 of Section 3 of Hungary's *Act CXXVIII of 2011 on Disaster Management and on the Amendment of Certain Related Acts*, a disaster is "…a condition or situation that endangers or harms people's lives, health, property, the basic supply of the population, the natural environment, natural values in a way or to an extent that the prevention of or the response to damages or the liquidation of the consequences exceed the protection possibilities of organizations assigned to do so in a required cooperation order…" (Act on Disaster Management and on the Amendment of Certain Related Acts 2023).

Table no. 1: Physical and psychological effects
of disasters (Created by Author)

The effects of disasters – briefly	
Physical effects – direct and indirect	Psychological effects – direct and indirect
• Tragedy, death, injury (permanent)	Over motivated environment – due to physical effect – psychological distress
• Economic effects – damages (certain or uncertain; production)	Shocks, negative views of life
• Infrastructure damage (disruption in the availability of services ensuring the continuity of living standards, outages – dependence)	Instinctive escape, devoid of any rationalisation – a reaction inferior to the development of one's personality
• Losing home – where to go? Should one go back?	Mass panic
• Humanitarian crises (increasing involvement)	In the case of the ones who experience disasters: a lifelong fear, maybe even of nature itself
• Mass migration	Psychological trap:
• Public health implications	– action is accelerated or blocked and becomes inaccurate
• Environmental problems (pollution, habitat destruction)	– intellectual progress, decision disorganisation develops coupled with a sense of helplessness
• Community drawbacks – government instability, social inequality, unemployment, funding?	The mental stability of several individuals does not return to balance since their psychological resources are impaired due to various stress reactions

It can be clearly established from the above mentioned, international and Hungarian concepts of disaster that, under this notion one understands a situation or condition in which the involvement of the population and the higher levels of administration is inevitable, a situation when human lives or property are at risk. Regarding vulnerability, it can be stated that – based on what has been stated – psychic consequences may also occur apart from physical damage, psychic burdens may also occur when an individual loses their movables, personal belongings and the availability of services to ensure the continuity of their living standards.

In the 21st century, it can be observed that social development is associated with the existence of supporting infrastructures, supply systems and their continuous operation. These have the disadvantage that their role of maintaining a living standard becomes too important. If they stop or become disrupted, it increases vulnerability. Opportunities given by technological progress distort too much the ancient nature of man, the struggle for basic survival. It can also be said that society has over-reassured their own survival, which causes undesirable social changes. Such a negative effect is a general deterioration of health observed in a large part of the population. Because of social changes (low-powered lifestyle, rushing and stressed living conditions, media rumors, extreme work, urbanized form of life), an individual's "psychological immune system" is constantly exhausted due to inadequate physical condition, malaise, which can easily develop into depression. Health deterioration brings along mental instability. People with technological support systems and infrastructures – among other things – have fallen into the trap of progress. In the increasingly "rushing" world, human beings have many stress sources of anthropogenic origin, thereby reducing their own mental resilience. Burdens of physical and psychic origin are present in our time, to varying degrees.

The devastating manifestations of the reasons causing incidents and disasters include, but are not limited to creating, a so-called over-motivated environment where individual physical effects (such as odors, the wailing of the injured, the presence of deceased persons, sound effects, and the view of the living space perishing) strongly consume the human psyche (Hornyacsek 2010).

1. Early Psychic Phenomena on Incident Sites

"It is not the strongest of the species that survives but the most adaptable."
Charles Darwin

According to item 7 of Section 3 of *Act CXXVIII of 2011 on Disaster Management and on the amendment of certain related acts*, the area affected by the damaging effect of a disaster "is the area where governmental measures are to be taken in order to respond to the consequences of natural or human-triggered disasters

(rehabilitation)" (Act on Disaster Management and on the Amendment of Certain Related Acts 2023). An incident site is where the devastating effects of an incident are manifested the most (Hornyacsek 2012)[2]. Based on their types, incident sites may be categorized as nuclear, chemical, fire, explosion, accident, abnormal technological process, technical failure, spill of hazardous materials or any other incident, and incident sites may be created by floods or inland waters, earthquakes, other natural disasters, extreme weather, biological infections, and the combination of these.

Those who have been affected to some extent by an incident or a disaster that might have originated in a hazard source, were subject to considerable physical and mental pressure. These undesirable burdens may have early psychic consequences, in the psychological sense (immediately following the post-crisis phase), or late ones (following an incident at a later time). All natural and human-triggered incidents and disasters have an accompanying psychic phenomenon.

On an incident site, one should calculate with injuries and significant physical load; from the threats of psychic origin, with increased fear, fright and panic. In general, it can be said that the individuals, *before* an incident occurs (e.g., the reception of evacuation), *during* that (resettlement, evacuations, sheltering, technical rescue, interventions, disruption of basic supplies) or *after* that (due to destruction of residential buildings, change of the environmental conditions, loss of next of kin, etc.), find themselves in a life situation which psychically burdens them.

The processing of physical-psychological effects on an individual is performed by the nervous system with the help of sensory organs and receptors, and then they "define" the different reactions and behaviors. An unexpected incident, the danger of a disaster, a disaster itself may trigger a behavior different from normal. For example, a good manager, a decisive and robust person, in an extraordinary situation simply becomes rigid, confused and unable to think properly. Their body perceives the threat, and their thalamus (epithalamus, thalamus, hypothalamus) will indicate the danger. The sympathetic nervous system receives[3] the stimuli and informs the adrenal gland, which produces catecholamines[4] and injects them in the blood circulation, thus reaches a higher level of preparedness (Lőrincz, et al. 2008). This has visible and perceivable effects. For example, pupils widen, the mouth dries out, the heart beats faster, the oxygen supply rises, the blood sugar level rises, more blood gets into the brain, the muscles and the vital organs, the performance becomes temporarily higher, the clotting time of the blood is shorter. These are normal reactions in an abnormal situation. These are emergency reactions of the body that serve to

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[2] English translation of the original article-source title: The Psychic Impact of the Mass Disasters on the Members of the Rescue Team, the Fundamental Early and Post Psychic Symptoms and the Possible Options to Avoid the Negative Impacts of these Events.

[3] Responsible for stress response in stress situations and emergencies, is activated as an entirety of the system.

[4] Hormones.

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handle the physical and psychological effects, ensuring survival. However, if the load is prolonged or the effects are too intense, the arousal level will be high (body's general excitement and vigilance state), and uncontrolled behavior or incapacitated state can easily occur (Bolgár and Szekeres 2009). If an individual cannot cope with the physical-psychic burdens, health deterioration may occur (heart and circulatory diseases, diseases of the stomach). If the affected person is exposed to increased, long-lasting negative effects, even years after the critical incident, stressful behavior may be witnessed.

Table no. 2: Characteristics of a person in crisis
(Bolgár and Szekeres 2009)

Physiological reactions	• Tension: pain, tremors, poor coordination, fright (motoric stiffness during longer periods of load) • Preparedness: "rushes" to all sudden sounds or movements, cold sweat, dry mouth, paleness, difficult to focus the eyes, lack of sense of air, hyperventilation (overdose of oxygen), tense stomach, nausea, frequent urination • Fatigue: the body invests enormous energy in protection, but after a while, the organism runs out of protection reserves, protection cannot be maintained. Resistance decreases. For example, feeling of tiredness and numbness, every movement requires effort
Cognitive reactions	Confusion, disorientation –ignorance, poor concentration, memory disorders, extraordinary deconcentration, flashback may occur (as either visual or acoustic stimulus)
Emotional reactions	Mourning (the most critical emotional state), guilt, depression, anger, distraction, fear, anxiety (reaction after extraordinary events – fear without object), feeling of ineffectiveness, self-distress, stress (increased protection and coping reaction)
Behavioral reactions	Total inactivity, withdrawal from social space, emotional outbursts (crying, laughter), unjustified intolerance (impatience), aggression, striking loquaciousness or taciturnity, hyperactive behavior (forced uncontrolled motion, all reactions are accelerated)

From Table no. 2, one can see that the reaction of an individual to psychic challenges is diverse, complex and multileveled. The behavior of a person in crisis is influenced by a psychic burden which – as one can see from the table – cannot be processed and dealt with alone in the long run at a normal level. From the several possible behavioral characteristics, it can be concluded in general that psychological assistance has *raison d'etre*, as it is an inevitable and necessary option for protection.

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From the early psychic phenomena, **stress**, increased **fear** and **panic** are to be treated with priority on an incident site.

Stress

Stress is a more advanced kind of protection, a coping reaction of an individual against the stimuli of an incident. This is an intensified adaptation process for the person receiving the stimuli, that is, stressors (Hornyacsek 2010). There are various physical processes in the body (rising heart rate, increased blood pressure, adrenaline and norepinephrine separation). Stress generates psycho-physiological processes that promote the formation of a more resistant behavior (preparing for coping with the difficulty). If stress persists in an intensified manner, a state of exhaustion can easily occur, as the greatest efforts of the organism digest enormous energy, which is not sustainable over a long period of time. According to János Selye[5], the essence of stress is adaptation. The more intensive the stress situation is, the greater extent of adaptation is needed. Caused by stress, various reactions occur, such as depression, aggression, restlessness, intensive mood changes, etc.

Stress may be classified into two types according to how an incident has occurred, what kind of a trauma has been endured during a disaster, what are the immediate symptoms or the symptoms endured after a trauma, and what symptoms emerge only after a certain time:

− acute stress disorders: these occur suddenly, during or immediately after stress, last minimum of two days up to four weeks, and cause major functional impairments;

− Post-Traumatic Stress Disorder – PTSD: the psychic injury occurs a certain period of time after the experienced trauma.

Fear

Fear is a strong emotional state that causes an unprepared individual to easily lose his/her sense of judgment and, consequently, make decisions inappropriate for the situation, so these may end up in tragedy. If it is possible for the individual to control the state of mind maintaining conscious thinking, the sense of danger can be reduced. For example, if meteorological, hydrological events are predictable, the population can be prepared, – and thus an advantage of time can be gained with regard to protection measures. Adequate emergency communication and alert can result in an even more effective protection by means of the time advantage, thus the conditions for the population to survive may be improved.

The sources of the development of fear:

− The direction and object of fear is known before the possible occurrence of the adverse effect, it is possible to avoid the danger, either by external assistance or on one's own.

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[5] He was a successful internal medicine practitioner and chemist, one of whose most popular works was published in 1964, entitled "Életünk és a stressz" (Our Life and Stress).

‒ The direction and object of fear is known, however, the possibility of avoidance is uncertain or excluded.

‒ The object of fear is known, but its direction or the possibility to avoid it is uncertain. This threatening situation causes a stress effect, during which the problem-solving methods that previously proved successful appear to be ineffective, so internal tension may become more and more powerful. Thus, a sense of hopelessness can arise which can lead to an uncontrollable state of panic and a complete physical-psychic collapse.

‒ Neither the direction, nor the object of fear or the time of occurrence of the event are known. Generally, this, can cause persistent situational aberration, which, from the examples taken from practice, may occur due to the lack of relevant information, e.g., due to a facility near one's residence believed to be dangerous. In such cases, we suggest primarily to raise awareness and dissolve the unreasonable fear by providing information as clear as possible through dialogue.

Panic

According to Iván Kéménczy, panic is actually an abnormal nervous system reaction that explodes suddenly, occurring quickly and with great energy. Because of the lack of conscious functioning, intellectual and moral control is lost (Kéménczy 1980). In panic, human self-control and in general the level of consciousness decrease, and rational thinking may be pushed in the background. Individual consciousness, and attention may become constricted, extreme emotional passionate reactions may occur (e.g., shouting, anger, aggressive manifestations, crying, wailing, irrational or meaningless actions, etc.). So, this is a *regressive state*[6], in which a person often does not have control over himself/herself and can react to extreme situations as he would never do in a normal life situation.

The state of panic is a result of a sudden fear or fright, which seriously disrupts the order of mental processes, in the event of unexpected, frightening environmental impacts and events. Disasters cause panic very often, but a state of panic can itself cause a tragic end result or lead to a further incident or disaster. An important means to overcome panic created by fear is proper preparation and information.

The course of a panic reaction can be divided into the following phases for an individual:
‒ reflex phase,
‒ "stampede" type escape,
‒ unjustified urge to move,
‒ subcortial phase (moral zealousness, self-sacrifice),
‒ "subcritical" and aggressive phase, a shift in responsibility,
‒ return of sober judgment, perceptiveness.

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[6] Regression means slipping back to an earlier development level.

The panic symptoms of an individual are quite diverse, however, there are several typical and obvious indications (Hornyacsek 2010):
   − sweating,
   − increased heartbeat,
   − ringing in ears,
   − choking,
   − irritability,
   − blurry speech or voice,
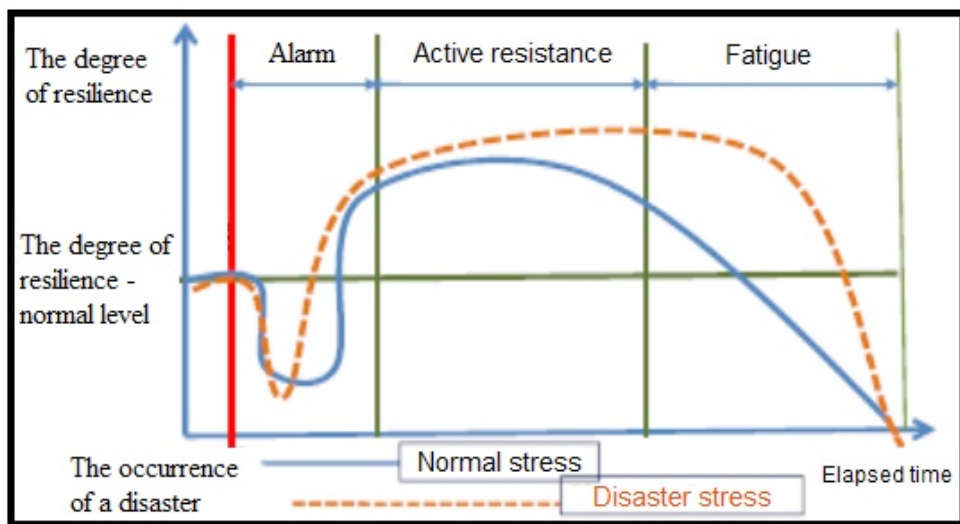   − fainting,
   − other symptoms.

Figure no. 1: The phases of general adaptation syndrome when a disaster occurs, according to Selye's research (Created by Júlia Hornyacsek, 2010, based on János Selye)

During a disaster, it is not always the incident itself that is decisive, but how it is evaluated by the physically-psychologically affected person. Individuals, primarily, evaluate the situation during which they consider it innocuous or harmful (Hornyacsek 2010, 10-12). During the evaluation phase of a stress generated by a disaster, stakeholders evaluate the event as clearly negative, whether they are affected directly or not. As a first step in the process of the General Adaptation Syndrome, a threatening stimulus and alarm reaction occurs, which last for a short time. Different processes start in the body (increase in heart rate, blood pressure, blood sugar level, separation of adrenaline and noradrenaline, parasympathetic inhibition). It is followed by a second evaluation when it is decided if the person's resources are enough to cope

with it and he/she has options available for the solution. In disasters, even the second evaluation may be distorted, which can lead to panic. Often, they do not feel strong to escape and thus survive, and so their chances to realize their ability to participate in rescue or self-rescue get worse. Normally, in a disaster, an adequate response to stress is witnessed through relevant coping mechanism, i.e., participation in active self-rescue or rescuing others. Severe meteorological incidents or disasters caused by such incidents may cause fear, anxiety, anger, aggression, possibly subsequent consequences, psychosomatic changes, PTSD, depression, etc. (Hornyacsek 2010):

The main types of panic are the following:
− situational (escape),
− mood,
− efforts to acquire and recover.

The stages of panic are:
− Pre-critical phase: becoming aware of an incident; a short period, sometimes like a flash; shock, feeling lost,
− critical phase,
− chaotic attempts of individual action,
− the emergence of successful behavioral patterns,
− the emergence of leadership roles,
− post-critical phase: rational solutions, cooperation, and helpfulness will gradually dominate,
− return to the previous normal state.

Panic can be interpreted not only for individuals but also for the masses (Bolgár-Szekeres 2009). The mass psychological effect of panic differs from that of an individual, by intensity and the capacity to cope with it. A large number of people can be regarded as a peculiar formation, and special psychological rules apply. The character of a human mass is different from that of the individual person. In panic, emotions extend from individual to individual, like a chain reaction. As the threat of injury increases, the crowd becomes less and less controllable and organized. In a group situation, no matter how different the individuals are, a kind of "collective power" may develop. In a community, the sense of responsibility of an individual decreases and the tension and the strength of an individual may multiply. In people who witness the treatment and resuscitation of the injured as eyewitnesses, intense tension may also block the ability to act as an individual.

Disasters cause fear, increased tension, anxiety, and stress in humans. The feeling of uncertainty, the fear of deterioration and the fear of death often pose a great burden. The late consequences, such as depression or PTSD, might cause the victims to escape to suicide. In disaster management, therefore, the recognition of normal psychic phenomena should be given more emphasis and attention to. In addition, the prevention of the late harmful consequences should come to the fore (Hornyacsek, 2010).

Late psychic phenomena occurring after incidents and disasters

Due to the effects of extraordinary meteorological incidents, various stages and groups of people can be differentiated. In stage I, the direct effects generate the largest group of people, based on psychic reactions of those who are confused: their attention becomes constricted, they act automatically, almost without thinking. In the next group (stage II) are those who are relaxed, some may even become suitable for rescuing others. In stage II, the organization of psychic functions of people can be observed. The smallest group (stage III) is composed of those who are in the most critical state with respect to rescue; they shout, run around, fall asleep and panic. In stage III (post-traumatic phase), it becomes clear if the psychological phenomena are normalized in individuals or the different pathological reactions become permanent; PTSD may develop with other complications such as depression, psychosomatic illness, addiction, etc.

Coping with psychic phenomena following a disaster depends on many factors and is mostly successful (Hornyacsek, 2010: 14). Sometimes, as a late consequence, we encounter psychosomatic disorders, alcoholism or other addictions, depression and PTSD. Cases that render the disadvantaged people completely disabled are not uncommon and this situation can end with the destruction of the environment and possibly themselves.

A person struggling with depression due to a disaster changes and turns inward, feels worthless, ineffective and inexperienced. They do not want and cannot change this situation. Whether depression develops or not, depends, to a great extent, on how the individual's psychological immune system is fit at the time of the incident. That is, what level and state of personality traits are capable of enduring the stress effects, to successfully cope with the threats in a way that the integrity of the personality, its operational efficiency and its potential for development are not violated.

Post-Traumatic Stress Disorder (PTSD)

Incident sites, created by the complex effects of extraordinary meteorological incidents, may have another late accompanying psychic phenomenon as well, i.e. PTSD, which is a persistent, severe anxiety disorder accompanied by psychotic symptoms. Symptoms may be divided into four groups, namely: the first group includes symptoms that are related to the re-emergence of a traumatic event or some of its details, such as recurring nightmares or repeated re-thinking of events in a self-torturing way (Az átélt traumák utáni pszichés zavarok, tünetek [Psychological Disorders and Symptoms after Experiencing Trauma] n.d.); the second group involves the typical behavior of maniacal avoidance, which means that a person avoids places, situations and activities that remind them of the traumatic event; the third group is a phenomenon when an individual shows a reduced response to the outside world. This is called "emotional amnesia". A person gets alienated from others, loses their interest in jobs or engagements, etc. The fourth group includes, for example,

increased levels of arousal, anxiety and guilt. An individual, during recollection, experiences disturbing liveliness, vigilance, they cannot sleep. Sometimes they feel excessive guilt because they survived that tragic event, or because of what they have done for their survival (Bolgár and Szekeres 2009).

According to post-traumatic stress disorder, a patient is:
- acute if the symptoms are present less than 3 months.
- chronic if the symptoms are present more than 3 months.
- delayed start means that the symptoms start at least 6 months after the trauma.

The treatment of post-traumatic disorders requires a professional intervention in the chronic phase because, although a person suffering from PTSD learns to live with these symptoms and difficulties, it is difficult to get rid of them.

If post-traumatic illnesses, symptoms endure for years, they can cause permanent personality changes. In such cases, it can be seen that a person becomes distrustful towards his/her environment and the people around them. Hopelessness and intolerance may persist, the person may become uninterested. The greatest danger is that all these feelings increase the possibility of suicide.

2. Psychological Threats of Terrorism

Terrorism, as one of the most crucial security challenges nowadays (Alexander and Klein 2005) (Farkas 2016), is a social phenomenon based on (unlawful) violence (Fletcher 2006) (Bartkó 2011). Its causes may include political, philosophical, ideological, racial, ethnic, religious, or other factors (Korinek 2015). The psychological final purpose of various terror organisations and groups is to achieve a change of attitude and behaviour of the individual, community, and state. Violence acts more as a means, rather than a purpose (Murányi 2021). Regardless of the root causes, such acts significantly impact the legal system, such as human rights (rights of freedom), the functioning of a legitimately established government, the national security of states (Maras 2016). Strong – especially democratic – states reduce the development of terrorism, however, unstable state measures and weak governance itself increase the development (Krieger and Meierrieks 2001). Such significant elements of everyday life are these that the psychological consequences are relevant. According to this, in the following text, the author applies two policies in relation to terrorism. On the one hand, the psychological causes of the emergence of terrorism are examined, while on the other hand, the psychological threats of terrorism are discussed in further detail.

Psychological reasons for the development of terrorism
The "development" of a terrorist's personality can be traced back to biological or psychological causes (Korinek 2015) (Hamden 2019). Considering the biological tracing, the behaviour of the perpetrators is influenced by hormonal and neuro-

chemical processes and unbalanced states which may be determined by the excess of norepinephrine, acetylcholine and endorphins. As for psychological reasons, the tendency to aggression is definitely worth mentioning (Póczik 2007). Although no one is indeed born a terrorist, a person may become one (Nagy 2020). In terms of "psychological development", several conditions can cause personality distortions for which the individual may be susceptible to terrorist organisations. Such are severe psychological influences in childhood, adolescents with personality disorders, community socialisation (Nagy 2020, 73), identification with the victim community, victimisation, etc. (Horgan 2008). Their motivations and psychological profiles are diverse, characterised by a distorted, absolutist worldview, and the dehumanisation of the enemy (Murányi, "A terror árnyékában" [In the Shadow of Terror] 2021). In the case of the latter, humans, as living beings, are erased from the terrorist person as the goal is to break down each barrier to manslaughter. A strong religious ideology may greatly facilitate this. With the created concept of the enemy, a lack of control and common sense can be maintained in the long run. Not to offend any religion, however, in the case of Islam, killing the enemy means a reward in heaven (Weitzmann 2005). Terrorists are characterised by complacency, self-assertation needs, a strong sense of social exclusion, the motive of anger, and extreme frustration (Nagy 2020, 74). Although not only terrorist groups are exposed to xenophobia since of the fear arising from the activities of their cause, people who have not experienced it directly begin to hate different ethnic groups in general. This creates a kind of spiral of violence that never ends (Smith, Mackie and Claypool 2016, 872).

Analysis of the psychological threats of terrorism

Panic after terrorist acts can lead to the inhibition of higher cognitive functions (Murányi 2021, 173). Response mechanisms may work (e.g., suppression, denial, dislocation), however, if this occurs permanently or more frequently on an ad-hoc basis, it puts a lot of pressure on the level of the individual or the community (Farkas and Borbély 2018). This definitely leads to a deterioration in life situations. Psychological effects include strengthening feelings of helplessness and hopelessness, disrupting faith in the state, proving the incompetence of authorities, destroying a sense of security, keeping individuals in constant fear and anxiety, enhancing experiences of failure, etc. (Alexander and Klein 2005, 55).

An important part of the implementation of terrorist attacks (viewed from the perpetrator's side) is the communication of the committed act. In order to create fear and panic, terrorists need publicity (Nagy 2020, 79). The Islamic State (ISIS) has revolutionised the use of modern media as a weapon in terrorism. As an example, the Salafist Group for Preaching and Combat in Algeria, taking advantage of the Internet and the evolving online communication opportunities, began to intensify online messaging in 2005, and later joined a larger organisation, Al-Qaeda, and

this only intensified further (Besenyő and Sinkó 2021). As social media has spread, terrorism has expanded its communication channels, and according to specific studies (Asongu, Orim and Nting 2019), there is a link between social media, Facebook penetration, and terrorism. In 2019, the global social media penetration rate reached 3.2 billion persons (42%) (Zeiger and Gyte 2020), which in January 2022 grew to 4.62 billion (58,4%) (Kemp 2022) therefore, the accessible user base is quite significant. It is a tremendous thing that the Islamic State of Iraq and Al-Sami (ISIS), for instance, are known for producing execution videos that are broadcasted on YouTube and Twitter (Zeiger and Gyte 2020, 358). The point here is not the use of weapons but the psychological message: anyone can be killed at any time (fear of the innocent) (Murányi 2021, 178). In 2012, 13% of Boko Haram's messages had appeared on YouTube and Twitter, and in 2015, all of their messages were shared on these platforms (Besenyő and Sinkó 2021, 72). Referring further to the African continent; social media is also used regularly by AQIM, al-Shabaab and Boko Haram (primarily for networking, information and funding reasons) (Besenyő and Sinkó 2021, 74). As a solution, perhaps the restriction or complete cessation of such contents may provide a detailed solution. According to Murányi, fewer bombs, more love and more psychology are needed (Murányi 2021).

Possibilities of reducing the effects of psychic phenomena following disasters

In addition to damage remediation and elimination, emergency and crisis communication, crisis intervention (the use of panic-avoidance mechanisms, separation of instable individuals, psycho-social support), restoration and follow-up activities are paramount tasks. It is important that in parallel with rescue activities, psychic assistance takes place on the incident or other affected sites. Types of assistance may be as follows, considering the physiology of incidents (Teknős and Endrődi 2014):

− acute phase: tranquility, medical help, nursing, providing information, opportunity for religious acts, etc. ceremonies, basic nutrition, toilet facilities, identifying losses, satisfying the need to "talk off" the incident and happenings, relaxation techniques to help restore calmness. During the acute phase, the best solutions are crisis intervention counseling, crisis support and crisis therapy (Bolgár and Szekeres 2009),

− transitional phase: help return to everyday life, assistance procedures, coping strategies, helping to accept losses, to find and identify the missing, etc.,

− closing phase: recognition of unsuccessful coping by an individual (the formation of phobias, depression, PTSD), referral to psychotherapy (Hornyacsek and Hülvely 2009) (Hornyacsek 2010, 23).

During a crisis intervention, an individual's problem-solving ability must be improved to an appropriate level, since the goal is to restore the previous equilibrium. This is a method of treatment that greatly helps uncover an individual faulty behavior (based on known symptoms) and strives, together with the injured, to resolve the

situation as soon as possible. Charitable, ecclesiastical and social organizations can greatly support crisis intervention; on the other hand, the victims' families and social networks may help. Professional practitioners, voluntary psychologists, psychic aid workers, pastors, and social workers all work and perform a vital background work to restore the victims' psychic balance, besides eliminating the negative psychic consequences originating in extraordinary disasters.

3. Crisis Intervention, Aftercare as a Treatment Option for Early and Late Negative Psychic Phenomena

In the next section of article, we have chosen to discuss about the prevention and treatment of psychic phenomena already described as potential and possible protection.

Among the psychological methods of prevention, perhaps the most important is preparation, which is getting ready for the mental challenges during disasters. It is important to define the tasks to be carried out and to establish an action plan that will effectively eliminate the consequences (Hornyacsek 2010).

Professional and non-governmental organizations (NGOs) are involved in protection: their primary task is protecting human lives, rescuing and looking after the injured. Since this is a complex system of tasks (protection, rescue, physical movement, damage assessment, psycho-social support, etc.), its command and control is inevitable to be performed by professionals. Different NGOs, associations, churches are included in helping people affected by disasters, as they can provide social assistance, psycho-social counseling, and mental health support. Rescue teams of churches have proved that during and after minor or major incidents, they can provide assistance to physically and mentally injured, survivors, and the ones shattered in many ways. Churches maintain protected spiritual communities, so they can support even hundreds of people in need through their well-developed family and social networks (housing, food, etc.).

After incidents due to weather, psychologists, doctors, social workers, mental health workers deployed there start their extremely important background work among the population. Crisis intervention (as a complex order of actions) occurs usually within the first 72 hours after an incident, or if it has already occurred, from its notification. It is important to point out that, in the current article, we do not interpret crisis intervention as an assistance against suicide, but, as preventing the development of mental illnesses.

The steps and features of crisis intervention
The first step is contacting the relevant individuals. Then, during the interview, mapping the antecedents and, on this basis, establishing trust and a positive

relationship follow. One needs to get involved quickly emotionally, and to achieve a reduction in panic, anxiety and tension. Thinking as one needs to be expanded and the stabilization of the emotional state and in raising hope must be done in order to avoid dependence in the future. In such cases, psychological first aid must have already begun, thus, restoring the individual's increased emotional state to the original level. Many people are not able to process events at the right level in the first 72 hours of crisis intervention, so, it is recommended to provide aftercare for them. In such cases, the psychic helper brings hope with their behavior and motivates the injured by supporting them in participating in subsequent therapies.

Crisis Invention possibilities and tasks are the following:

− create the basics of permanent presence (contact, confidence building, future psychic care, therapies) on the incident site.

− voluntary psychologists and psychic helpers reduce the crisis that involves, as much as possible, emptying negative feelings from the human brain to make the patient regain, as quick as possible, stable self-sufficiency so that they can act individually, without external help,

− secondary effects of extraordinary weather can be floods (torrential rain) that may generate new problems. The property of residents can be flooded. Many times, tenants cannot go back to their residences, anxiety and post-traumatic stress can arise after being in insecurity. One of the solutions may be crisis intervention reception stations, parallel to which temporary accommodation should also be set up. Private and municipal apartments are good examples of this, etc.,

− ensuring the supply of basic necessities (housing, food, medicines, clothing),

− social assistance.

Crisis intervention is a fundamentally quick, effective intervention, involving acts to help the environment. The emotional wounds are perhaps less visible than physical injuries, but they often generate emotional and psychological effects for a much longer time than those because of the losses of material nature. Neglected emotional reactions may occur later in the survivors as a serious psychic syndrome. Early and proper psychosocial support can prevent psychological pain and suffering from developing into a more severe disease and help people who are more affected to cope with the crisis and return to everyday life (Sáfár and Hornyacsek 2011), (Zsákai 2021).

Psycho-social support (psychological assistance) is one of the most important ways to prevent psychic consequences. The psychological effects are caused by incidents and experiences that affect emotions, behaviors, thoughts, memories, the capacity of an individual; while social influences concern common experiences with shocking incidents that affect human relationships (Sáfár and Hornyacsek 2011). Psycho-social assistance needs to be shaped to the needs and the specific circumstances of the situation, adapting to the physical and psychological needs of the population.

The task of the professional and trained voluntary personnel is to help the population process the psychic shocks caused by the circumstances. The aim is to avoid the escalation of harmful psychic symptoms, to grant assistance in processing life situations that are expected to cause stress.

Psychic assistance has several forms (Hornyacsek 2010, 24):

− preclinical support is not psychotherapy, but in the event of an emergency situation, early intervention is necessary before the appearance of pathological changes. Its aim is to reduce tension, provide disaster relief and restore the previous equilibrium. Its features are action orientation, situation orientation,

− acute care is the form of psychic support that is used in times of crisis and an emergency; its aim is to support the adequate psychic response to incidents and to establish a psychic balance,

− aftercare is a form of support that follows a crisis situation. Its aim is to monitor the lives of people affected in this period, and to support them in their everyday lives, and if they develop psychiatric phenomena, direct them to therapy, and prevent the decline in their post-traumatic period.
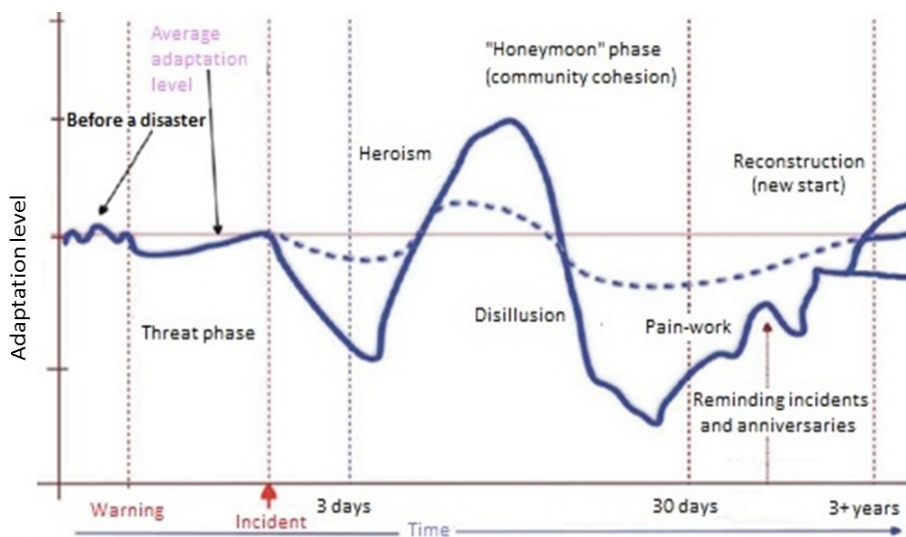

Figure no. 2: Flow chart of processing disaster crises
(Edited by: László Teknős, source: V. Komlósi, 2017)

Aftercare

− Mapping history (interview), finding a temporary solution.

− Supporting, tracking, monitoring, emotional twists, accepting personality.

− Preserving and representing some emotional reality, besides perceiving and responding to emotions and pains.

− Extending the constriction, involving other aspects, feelings, people.

− Reducing tension.

− Maintaining hope, ego strengthening.

− Assisting in turning to a specialist, hospitalization.

− Treatment of a crisis of a family or a narrower environment.

− Avoidance of dependence.

− Mobilization of all those who can help in dissolving constriction and providing assistance.

Crisis aftercare takes place in the first six months after the immediate danger, which can be performed with great efficiency by charitable organizations (such as Maltese Charity Service, Hungarian Red Cross, etc.).

As one can see, in the first month of crisis management, the professionals speak of a "honeymoon" and "community cohesion": when everyone helps everyone, they are open and trusted by everyone. This is a very specific state. In this case, the former social structure will be dissolved and transformed. Conventional boundaries are blurred: in territorial, ethnic, and hierarchical terms. Local people and people outside the community, professionals and civilians, minorities living previously segregated and the majority used to segregation, work together altruistically in order that the community renew and re-organize "coexistence". What happens instead? After the danger has passed, the personal pains of the injured are deepened and, at the same time, they are magnified, their personal interests are intensified and they want to "legalize" and acknowledge their eligibility in the broadest possible sense. Through their tragedy, their personality receives glorification, a "machine" has been set up to solve their problems, and they − with full reasoning from their point of view − expect the "world run around them". A sympathetic and helpful environment would accept this "expectation" for a while and "serve" it. After a while, they not only feel that they are burdened, they constantly listen to the complaints of the injured, but seeking for external help efforts to settle their situation, and envy many people: they feel that the injured might not have lost but "won" due to a disaster. The victims compare the support they got as well: who has received how much support and assistance (Čépe, Adányi and V. Komlósi n.d.).

Possibilities to avoid panic:

− one of the most important tools to avoid panic is adequate information (crisis communication). The most important goal is to avoid and prevent rumors, to prevent the spread of false information,

− strengthening of hope,

− if there is no direct danger to life, sirens, bells, alarm systems should not be not be operated,

− spontaneous or intentional formation of masses should be avoided, nodes causing crisis or panic should be highlighted and isolated,

− the law and order and the attention must be maintained; such groups must be under control and be manageable (purposeful tasks and exercises),

−general atmosphere improvement measures (ensuring the basic supply of population – to avoid starving, thirst, insomnia, and provide toilets, cots, medical care, to provide contact with relatives, etc.).

In order to prevent panic, it is expedient to take the following actions:

− the most important thing is to adequately inform people,
− to convince the crowd that the leaders are competent enough,
− increased maintenance of law and order and the discipline of a group,
− relief by the potentials of psychic support and care,
− attention should be paid to avoiding hunger, thirst, fatigue, insomnia,
−to separate people who are prone to panic or have already panicked.

At the occurrence of the state of panic, the following actions can bring effective results:

− the possibility of providing immediate contact with the rescue personnel,
− the voice of a person giving instructions should not suggest fear, but firmness, and should communicate the instructions aloud,
− whenever possible, rescue must be started in a controlled way,
−taking these into account, it is advisable to keep in mind also the measures to prevent panic.

Steps for treating severe traumatic stress:

− hazard analysis: what are the hazards; how and when they impact the environment,
− evaluation of injury: the effects on a person,
− investigating an individual's reactions: is (s)he vigilant or under the influence of a drug?
− determining the care method: should a trained firefighter or specialist do it?
− reconnaissance: are others affected by the incident, do they have symptoms of stress?
− contacting: introduction, support, diverting attention,
− "Jolting back": conversation with the person, discussing and analyzing what has happened,
− support: reassuring the person, ensuring compassion,
−normalizing reactions,
−looking forward: a summary of what has happened, discussing future events.

During the entire process of crisis management, a great emphasis must be placed on communication.

An individual in crisis incurs numerous psychic burdens, under which they can easily be "shattered". Amidst fear and uncertainty, appropriate information can stop the development or emergence of several other problems, or at least delay them.

Disasters cause a state of panic very often, but it may also be the reverse; state of panic can also create a disaster situation. Appropriate information is an important tool to overcome panic caused by fear, within crisis communication. During emergency communication, one of the most important goals is to avoid panic.

Crisis communication requires a high degree of organization, discipline, preparedness and quick adaptation to the situation. One should rely on the appearance of the media, who, if do not find or receive answers to their questions, would search for or create their own answers in extreme cases. These rumors can easily cause panic in a short time. In the last 20 years, the number of incidents of meteorological origin has shown an increasing tendency. Therefore, one should make plans for preparing communication based on the experience of the past for different meteorological anomalies. It is important for the information to be kept professional and do not create the impression that something is unspoken. It should be formulated in a way that even non-specialists clearly understand what to do. For example, in the event of an accident of a tanker transporting hazardous material, the population should not be burdened by the chemical formula of the HAZMAT[7]. If possible, describe the hazardous material; this would not be regarded as misdirection. Thus, a layman feels that they are trusted and have been informed on the HAZMAT they are exposed to. By doing so, they increasingly trust professionals and become more cooperative. If possible, let people who live there know how harmful impacts they may be exposed to. The first task when informing the population is always raising awareness. It refers to what people know or think of the emergency or not. It should be formulated in a way that even non-specialists understand very clearly what to do. It shows what people know or think of an emergency or do not. Based on the information received from the population, the information strategy is developed, with the help of which the population is made aware of the important updates that are necessary in order to avoid the increase of their threat perception or fear. It will become possible to establish and maintain a feeling of trust between the population and the authorities involved in the rescue operation.

Forms of providing information:

− press release: contains important data for the target audience, which reaches them through the press. The publisher does not overwrite the information formulated by the original author.

− News conference: is an verbal news announcement. It is usually kept close to the incident site. It is customary to send an invitation that contains the background material; also, appropriate press requisites are to be provided as well as power for the equipment.

− Interview: is initiated most often to be done with a spokesperson. They agree, in advance, on the goal and content of the topic. Types: electronically, by telephone, communication can be live or recorded.

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[7] HAZMAT: hazardous material, dangerous substance.

− Report: made on the spot, based on experience gained on the site, by addressing the responsible persons.

− Live coverage: goes on in the vicinity and continuity of the event, thus the authenticity of information is increased.

− Brochure on hazard sources: it is worth issuing it with detailed information; it must be continuously updated.

During the protection against disasters and emergencies, it is important to provide continuous awareness and updated information to the population with preventive purposes. The information should be aligned to the existing situation, as all emergencies are different, therefore, different responses are required from the people concerned. The training and education of communicators is significant, since the correct or incorrect choice of strategies influences if a particular organization has a positive or negative image. Hungary's accession to the EU and the increased attention towards disasters make it inevitable to correctly select crisis communication.

Conclusions

Mankind has always been exposed to different kinds of dangers. One group of threats is related to meteorology, whose number and intensity have continuously been rising for the last two decades. Individuals at the sites of damages caused by weather anomalies always endure some kind of physical and psychological impact. It can often be observed that at certain damages, previously well-functioning problem-solving systems collapse, victims lose their mental balance and become insecure and unstable. Generally, damages produce early (immediately following the crisis) and late (occurring with a time delay) mental symptoms. Natural weather anomalies are considered heavy mental burden, often it is impossible to tackle challenges happening at the same time and place. The affected people who are left untreated are very likely to suffer from permanent mental damage, which in the long run have a negative effect on their health. The state of those injured people who cannot recover from the crisis they went through may gradually deteriorate, depression and posttraumatic stress disorder may appear which can even lead to suicide. There are several possibilities when these people can get help and total breakdown can be prevented.

The treatment of people under strong emotional burden starts with emotional first aid, crisis intervention (Pavlina and Komar 2007). It is essential that an expert should arrive at the spot as soon as possible and he starts to monitor the individual's reactions and behaviour. The work of psychologists, community workers and those who are actively and effectively involved in mental first aid will become increasingly valuable in the following years, since they support the state's most valuable assets, its own citizens, in different crises. The state is the most important responsible character in the protection against disasters, so it has an interest in the physical

and psychological protection of its own citizens. Effective protection mechanism requires active social contribution, which means that knowing the increasing weather anomalies, possessing self-rescue skills, etc. are supposed to fall under the duties of a citizen. The population should improve their opportunities for physical and mental protection, which experts dealing with crisis intervention in Hungary can help through connection points that should be looked for, an issue of pressing urgency in the future (Ferencz and Teknős 2020).

Disasters have physiological impacts, which can be linked to psycological phenomena. It would be of utmost importance to analyse the psychological consequences of disasters as well and to conduct researches which would help to predict them. For this purpose, unitary, national trainings are necessary, which are not yet available. Charity organisations, churches could offer a lot of possibilities, but they must be coordinated at state level. Financial resources needed for admission and operation have to be allocated. These entities are valuable as psychological defensive systems because of their expertise and social networks. In the background, professionals, volunteer psychologists, pastors, social workers all strive to reduce negative psychological impacts of extreme weather events and to restore psychological balance (Teknős and Debreceni 2022).

According to David and Susan (2005), terrorist incidents can cause a higher level of psychopathology than natural disasters (e.g., tsunamis and earthquakes) since predominantly terrorist incidents systematically affect the civilian population. As an example, a year after the Oklahoma City bombing in 1995, the number of PTSD patients in the population increased significantly, while substance and alcohol abuse increased to extraordinary proportions. This could have been measured in relation to the destruction of the World Trade Center or relatives of the victims of the 1988 Pan Am Flight 103 bombing in Scotland. Terrorist incidents are characterised by achieving the greatest possible impacts with a low budget. From a psychopathological standpoint, terrorist attacks have deeply significant effects in the long run. Perhaps it is even a risky statement that it is greater than, for instance, in the case of disasters of natural origin.

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