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ASIAN DISASTER REDUCTION CENTER
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DISASTER EDUCATION AND WAYS TO REDUCE
SOCIAL AND PSYCHOLOGICAL VULNERABILITY TO
DISASTER

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Most people in Armenia live in areas of threat from natural disaster, whether it be from floods, severe storms or earthquakes. Pamphlets and brochures available from local council offices, emergency services and community groups provide helpful information on how to be prepared and what to do in an emergency situation to protect lives, home and property.

As well as information on physical and practical preparation, it is very helpful for people to know how to prepare psychologically before a natural disaster and how to cope emotionally during or after a disaster. Knowing ahead of time how a disaster situation might be experienced can help to decrease people's anxiety levels and overall psychological responses. Being psychologically prepared when a disaster is threatening can help people feel more confident, more in control and better able to make effective emergency plans. It can also help to reduce the psychological distress and longer-term mental health problems that can result from the trauma of being involved in disasters.

Of course, the first and vitally important part of psychological preparation for an emergency situation is to be physically prepared with a practiced emergency plan. Making all the necessary physical preparations and having a household emergency plan that is well known and practiced by everyone will increase the sense of being in control when the emergency begins.

This study outlines the importance of being psychologically prepared and provides the steps to take for psychological preparation when a natural disaster is threatening.

✦ The aim of this research is to investigate and compare the international and Japanese experience in “disaster education and ways to reduce social and psychological vulnerability to disaster,..”

✦ Research methodology:

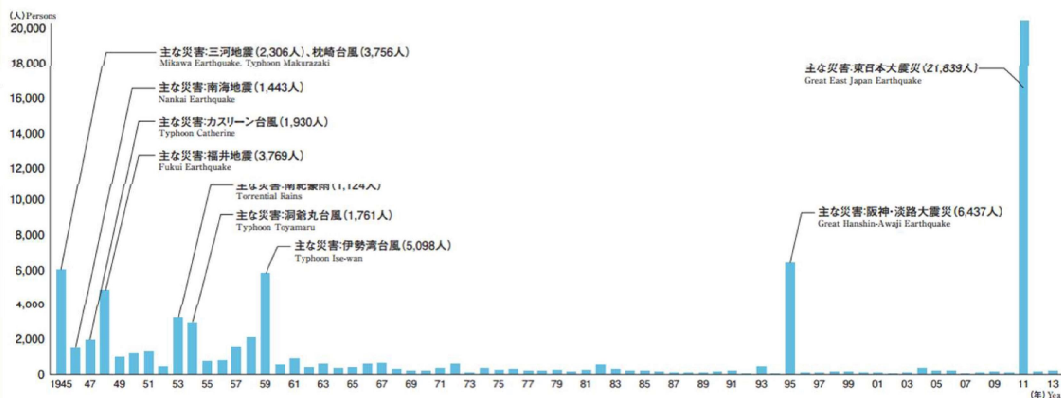
- Arrival and observation in the visited places and institutions related to disaster education
- Attending the activities related to some Disaster Education Issues.
- Literature Study / Documents analysis ; Review related literature on the psychosocial aspects of the disaster education.


DISASTER IN ARMENIA AND JAPAN

Armenia and Japan are highly vulnerable to a variety of natural hazards including earthquakes, floods, landslides and others because of their geographic location.

Japan is located in the Circum-Pacific Mobile Belt, the number of earthquakes and active volcanoes is quite high, and because of geographical, topographical and meteorological conditions, the country is subject to frequent natural disasters such as typhoons, torrential rains and heavy snowfalls, as well as earthquakes and tsunami.


自然災害による死者・行方不明者数の推移 The Number of Deaths and Missing Persons Caused by Natural Disasters





✦ Both Japan and Armenia are disaster-prone countries. Several times both Japan and Armenia hit by the great disasters such as earthquakes, landslides, floods, etc.

✦ As Armenia lies in one of the most seismically active regions of the world, the earthquakes have affected large numbers of people and caused significant economic losses.



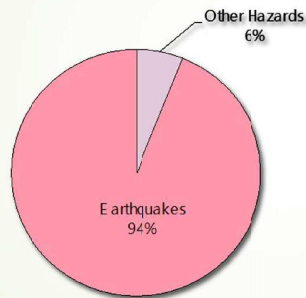
✦ The Government of RA recognizes the threats to the country's development posed by natural hazards. Since 1991 it has worked to address DRR and to increase disaster response and recovery capacities for the sustainable development of the country.

✦ Survey for Seismic Protection of MES RA develops various means for earthquake disaster management:

- coordinates activities performed in the field of seismic risk reduction in the territory of the RA;
- organizes preparedness and training of the population to cope with strong earthquakes;
- raising population knowledge and preparedness;
- training of trainers in government bodies and local authorities;
- organization of relief and rehabilitation of population and sustainable recovery.

In Armenia the earthquake disaster is the most harmful for people and property. Seismic events in the territory of Armenia are determined by its position in the collision zone of the Arabian and Eurasian plates.

Major risks of natural disasters in Armenia:



Earthquakes - 94%
Landslides - 3.15%
Rockfalls - 1.2%
Floods - 0.15%
Road accidents - 1.5%

The most devastating impact is caused by the earthquakes.

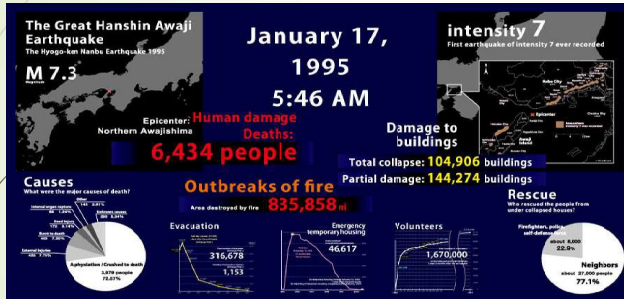
DESTRUCTIVE EARTHQUAKE SPITAK OF DECEMBER 7, 1988, M=6.9

- It took place on December 7
- Force in the epicenter is 10 points
- The death toll was 25,000
- Various injuries were reported 20,000 people
- 514 thousand people were homeless
- Earthquake hit 40% of Armenia's territory
- There were 21 towns and 342 villages in the region



Japan has suffered enormous damages due to repeated mega disasters since ancient times, at present the country is considered to be leader in disaster management because it has increased its resilience every time a large-scale disaster is experienced.

The great Tohoku Earthquake and Tsunami (2011)



Recent Major Disaster was Spitak earthquake in 1988. We need to have high level of readiness in case of any disaster.

The main reasons of the losses :

1. Underestimated seismic hazard
2. Structures design and construction errors
3. Wrong behavior of the population
4. Governmental bodies weren't able to organize the rescue works in time.

DISASTER EDUCATION IN ARMENIA AND JAPAN

- One of the ways of disaster mitigation, is disaster education. Armenia is considered a developing country, persistently in need of up-to-date world expertise in any scientific area which is likely to contribute to its sustainable development.

The state training system includes the following subsystems, which are done regularly:

- Training of target groups beginning from kindergartens and schools
- Educational programs, methodical manuals, relevant interactive materials
- TV and radio programs, publications in mass media
- Social-psychological preparedness.

Armenia collaborating with ADRC (since 2000) and JICA (since 2007) in the frame of various projects and programs implements the research, education and training for the DRR specialists who acquired and shared valuable Japanese experience.

Disaster education at kindergartens and schools



Ministry of Science and Education together with the Ministry of Emergency Situations in the frame disaster risk reduction program will submit to National Assembly proposals and additions for the Law “On Public Education” aiming at inclusion disaster risk reduction elements in the school curricula.

To implement the complex seismic risk reduction measures provided by the Comprehensive Program for Seismic Risk Reduction in Yerevan, developed and approved by the normative acts regulating seismic risk reduction activities in the territory of Yerevan

- Decree N 136-N of February 9, 2012 "On Making Changes to Government Decision No. 392 of 7 June 1999 of the Government of the Republic of Armenia"
- Government Resolution N 140 of 16 February 2012 on “Approving Pilot Program on Training of Impacts and Behavioral Impacts in Strong Earthquakes in Public Schools, Hospitals and Other Medical Institutions in Yerevan City”

Disaster education at the University, companies and municipalities,



ADRC-Armenia Cooperative Project

Training at the orphanages and nursing homes

There are 380 children and 175 staff, including guardians, mentors, nurses and technical workers, at the target Yerevan Mari Izmirlian and Kharberd (Ararat district) state orphanages.

There are 540 seniors and 275 staff, including psychologists, nurses and technical workers at Yerevan # 1 and Nork nursing homes. Out of Plan training including lecturing and Q&A module has been provided to the staff (109 persons) and residents (up to 6 year old 61 children) of Kid's Home which located in the Nork borough of the Yerevan-city. Thus, the Project has included all the orphanages of the city of Yerevan.



Training at the Yerevan Mari Izmirlian state orphanage



DISASTER EDUCATION IN JAPAN

Ministry of Education, Culture, Sports, Science and technology (MEXT) has a Disaster Operational Plan (2001). One of the points of plan is Guidance about Disaster Education at School which include advice to relevant organizations about education of safety, spirit of respect for life and volunteerism, and must be improved for securing children's safety and disaster time.

Educational curricula of disasters applied in schools of different provinces of Japan are different. The main ideology is based on recognition of the natural phenomenon and on organization of quick and relevant actions during a possible disaster. The models of training inside and outside a classroom are topical, critical role is given to recognition of the experience of the past and to the issue of avoiding the failures of the past, for implementation of which efficient means are considered to be meetings with adults with experience of surviving disasters and visits to museums and libraries of disasters.

Nigawa Landslide Museum



DRI Museum



Tsunami/Storm Surge Disaster Prevention Station/Museum



Disaster Mitigation Education at schools
 Important to mention that Each Prefecture's school's Disaster Education based on own Prefectures and Cities Board of Education. For example Disaster Education of Kobe City based on Board of Education of Kobe City and Board of Education of Hyogo Prefecture. And this mechanism is actual for each Prefecture in Japan.

	(age)	National	Public	Private(A)	Total(B)	ratio of private (A/B)%
University	upper 19	86	95	597	778	76.74%
High School	from 16 to 19	3	3780	1321	5116	25.82%
Senior High School	from 13 to 15	75	9982	758	10815	7.01%
Primary School	from 7 to 12	74	21713	213	22000	0.97%
Special-needs (educational) school	depends on cases	45	980	14	1039	1.35%
Preschool	under 6	49	5107	8236	13392	61.50%

(as of 2010)



Oshima Elem. School Imaginary Drill



The Government has designated the 1st day of September as the Disaster Preparedness Day and the week including this day as the Disaster Preparedness Week, and carries out various events to raise awareness and readiness about the disaster. Disaster drills and „disaster reduction fairs,, are held in various parts of Japan. It is obviously that Disaster Drills is one of the very important tasks for Disaster Education.

- In the Great East Japan Earthquake of March 11, 2011, disaster resilience education initiatives bore fruit, exemplified by the case of Kamaishi city Kamaishi Higashi Junior High School in Iwate Prefecture, where the lives of many school children and students who were at school were saved from the tsunami.

Bokomi-Drill



Disaster Resilience Education

The Aims of Disaster Resilience Education.

The primary objective of disaster resilience education is to bolster the disaster resilience (the capabilities to prevent the damage from worsening and to enact restoration measures) of communities, by heightening the disaster resilience awareness of each individual belonging to a community and by forging links within the community.

In order to do this, it is vital to create an educational climate that fosters equilibrium of the three elements of knowledge of the disaster history of a particular community, the attitude required to work together in standing strongly against disasters, and the skills necessary for safe evacuation and emergency aid.

Action for Disaster Resilience Education in Japan
 With the objective of improving the resilience of communities to disasters, related government ministries have set out and revised laws such as the following

Name of Agency	Revision to Law	Phase	Summary
Cabinet Office	Revision to Disaster Countermeasures Basic Act	June 27, 2012 (Act number 41)	Specifies the obligation of residents to hand down to younger generations the lessons of disaster resilience. Specifies that each disaster prevention organization including regional public bodies, private business etc. must endeavor to implement disaster resilience education, and pursuant to this are permitted to seek the cooperation of education bodies and public/private organizations.
Ministry of Education, Culture, Sports, Science and Technology (MEXT)	Guidelines for school disaster resilience education that nurtures "Zest for life"	March, 2013	Created as reference materials outlining the ideal state of school disaster resilience education and disaster prevention management, reflecting new items of concern emanating from school in the wake of recent natural disasters including the Great East Japan Earthquake (Update of materials drafted in 1998). In drafting the guidelines, a new frame of reference was added to the definition of safety in the existing government curriculum guidelines: this included nurturing "the attitude of acting with an independent mind" and "the awareness of contributing to creating a safe and secure society" in consideration of the report issued by the "Council of advisors related to disaster resilience education and disaster prevention management post 3-11" (July 2012). In particular, based on "School Health and Safety Act" and "School Safety Promotion Plan" (Cabinet decision in April 2012), the guidelines made it clear to schools that they must set aside time for teaching disaster resilience, and in order to bolster their instruction, should organize structured and systemic contents."
Fire and Disaster Management Agency (FDMA)	Law on strengthening regional disaster resilience with volunteer firefighting at the core	December 13, 2013 (Act Number 110)	Specifies that national and local public bodies shall enact measures necessary to promotion learning regarding disaster resilience in education at both the school and societal level. Specifies that fire brigades shall assume a leadership role in the education and training for autonomous voluntary disaster management organization women fire safety clubs, junior fire resilience clubs, and public entities within the boundaries of municipalities and any other organizations related to disaster reduction. Specifies that pursuant to this, municipalities shall enact any necessary measures.

Five basic principles for successful Disaster Resilience Education

1. Learn about the problems and peculiarities of a community, as well as its past experiences in Suffering disasters
2. Act on your own initiative, witness everything firsthand
3. Set Smart, Realistic Goals
4. Be proactive in mingling with key people in various fields and disciplines
5. Keep your approach positive, fun and lighthearted

The importance of being psychologically prepared

People often don't have prior experience of being in natural disasters or knowledge of just how stressful this can be. When people are under severe stress they are usually not able to think as clearly as usual and this can affect decisions and reactions. These are normal, although not always helpful, responses to a possibly life-threatening situation.

Being psychologically prepared can assist people to think more clearly and reduce the risk of serious injury and loss of life or property. Being cooler, calmer and more collected can also be very helpful to family members and others who may not be as well prepared psychologically for what is happening.



There are three main steps to being psychologically prepared for a threatening natural disaster:

1. Anticipate the anxiety and concerns that will arise.
2. Identify uncomfortable or distressing thoughts and feelings that may cause further anxiety.
3. Manage the responses so that the ability to cope remains as effective as possible.

► How to anticipate your reactions?

- To begin preparing yourself for the natural disaster that may be coming, try to anticipate what your likely response to the situation will be.
- Expect that the situation will be highly stressful and think about how you usually react to stress. Although these reactions are very natural they can get in the way of other necessary preparations.
- If you understand your usual reactions, you can learn ways to be better prepared to manage them when they happen.



Identifying the specific feelings and thoughts

It's important for people to tune into the specific feelings and thoughts they are having in response to a threatening natural disaster, as this will help them to find ways to manage them.


Managing responses to the stress

In stressful situations, people can feel more in control through two strategies:

1. Slowing down breathing to help calm the physical arousal symptoms
2. Replacing frightening thoughts with more helpful ones ('self-talk').

Some unhelpful psychological 'traps'

There are a number of common 'traps' that people can fall into in response to a threatening natural disaster. Knowing that these are common reactions may help people to understand and be better prepared if they find themselves feeling this way.



Social-psychological research

Department of seismic Risk Reduction of Survey for Seismic Protection conducts social-psychological research, sociological surveys, as well as processing and psychological analysis of data. As the main specialist of the Department of seismic Risk Reduction of Survey for Seismic Protection, social-psychological investigations are implemented, by me the goals of which are to reveal the level of cognitive and psychological preparedness on earthquakes among different segments of population.

Training on code of conduct of seismic protection is implemented by SSP CAP with an aim of increasing the level of knowledge on proper behavior during a possible earthquake, as well as a psychological research program is conducted in order to form the description of anxiety, stress resistance, cognitive-psychological preparedness of population on earthquake.

The relevance of the above noted activities is directly driven by the fact of seismic riskiness of our region.

► The aim of the program is to

Increase the level of cognitive-psychological preparedness of earthquake resistance, as well as to investigate the effectiveness of the training on code of conduct on seismic protection implemented by CAP and the possible level of application of that knowledge in practice by the trainees.

► Basic research methods:

T. Holmes' Method of Diagnosis of Stress Disorder and Diagnosis of Neurosurgical Stability, Taylor's alarm methodology,

T. Holmes and R. Rhee's "Methods for Identifying Stress-Resistant and Social Adaptation"

At the same time we used the questionnaire and statistical analysis methods.

Educational Psychological Measures and Research results of population society-psychological vulnerability in earthquake

In case of the absence of psychological preparedness, the suddenness of the situation is one of the causes of affective behavior. The forms of emergency behavior depend on the individual's psychological protection and subjective governance.

Testing has been organized and periodically implemented. Based on the results obtained, a correlation analysis of test results was performed. Research has been done to verify the effectiveness of the methodology. The above-mentioned first three tests were given to the audience, followed by teaching process. A month later, the same tests were held in the same auditoriums again.

In summary, it should be noted that in all four cities surveyed improvement of indicators was observed, which allows us to conclude the effectiveness of proposed methods.




Map of spatial and quantitative data of psychological testing


Social-psychological research in Japan

- ▶ In May 2016, a “questionnaire on risks in the surroundings” was conducted to elementary students and teachers in Tochigi Prefecture to identify their risk consciousness of school safety at a time of natural disaster.
- ▶ The extent of how each risk is imagined was derived based on the findings of the survey. An earthquake is supposedly imagined vividly because it is experienced frequently in Japan, and thus evacuation drills for earthquakes are exercised regularly in schools.
- ▶ In summary, in the study, the current situation and problems in Japanese schools were reviewed, systematic disaster management education programs were proposed for students to learn the correct knowledge on various natural disasters and enhance their capacities to forecast the risk and avoid it based on their own initiatives, and then the proposed programs were verified and evaluated in these schools.

Conclusion

- ▶ As a country prone to natural disasters, especially earthquakes, tsunamis and typhoons, Japan has a long history of disaster education. Broadly speaking, disaster education fits within two categories: publicly funded and voluntarily organized education. Currently, voluntarily organized disaster education is rapidly outpacing its publicly funded counterpart.
- ▶ Volunteers are educated about disasters both through formal and informal training and through the process of volunteering itself. The education sector plays an important role in the provision of civil protection hardware and software. School curricula help instill a culture of DRM and preparedness in the community. DRM education saves lives, as the “Kamaisi Miracle” shows. Students save their own lives and the lives of others when they lead evacuations in communities.
- ▶ Each Prefecture's school's disaster education based on Prefecture and City Board of Education.

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- ▶ The choice of tools and methods for conducting disaster education depends on the decision of the school and the teacher.
 - ▶ The tools ensuring education, in particular booklets, banners, books, game-exercises and their contents are in general the same.
 - ▶ Major attention is paid to the assimilation of each other's support model. Disaster education is not major school subjects in Japan and Armenia. Pupils study about disaster in the textbooks of Earth science subjects of both of the countries. Volunteers are educated about disasters both through formal and informal training and through the process of volunteering itself.
 - ▶ The Japanese model of Disaster Management psychological work and research is implemented particularly by National Information Center for Disaster Mental Health, Hyogo Institute for Traumatic Stress (HITS) and by several Universities, which have different types of trainings.
 - ▶ It is worth to note that the social-psychological work on Disaster Education is involved in the operations of CAP and in the Psychological Service of MES of RA.
 - ▶ Another Fundamental difference that exists between Armenia and Japanese disaster activities is the absence of Disaster museums and Experimental facilities in Armenia, which are effective tools for ensuring psychological-perceptual preparedness on disasters.

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- ▶ The specialists offer a methodology that can be used to mitigate the psychological trauma resulting from the earthquake. They also offer psychological nuances that should be used during training, awareness-raising and seismic protection. The study offers the teaching methodology, which is the following:

the selected instructions are brief,

relevant accents are made,

free from excess information,

they are aimed at people with the ability to act independently, can be taught using advertising posters, runner lines.

- ▶ In the application of the basic methodology specialists offer

learning duration: after training, anxiety and excitement are organized.

training periodicity: it is desirable to repeat several times a year.