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SUMMARY/ABSTRACT

Disaster is a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts (UNISDR, 2009). The effects of disasters can last for many years, depending on the disasters' size and scope. Although it is often impossible to prevent the occurence of hazards, reducing their negative consequences and/or keeping them at a manageable level can be achieved with measures to be taken. In order to determine precautions against the hazards, it is necessary to identify the hazards and the fragility of the systems (physical, social, administrative) that will be exposed to these hazards. Assessment of hazards and vulnerabilities together; in other words, understanding how, where and to what extent the possible danger will cause losses; refers to the comprehension of the disaster risk of the system.

While evaluating the physical, social and administrative components of vulnerability within the framework of disaster concept, their interrelationships (interactions) should not be ignored.

One of the most clear and distinct result of disasters is physical losses. These loses include casulities, superstructure and infrastructure damage. However, it is also important to analyze the social structure in order to understand all the effects of disasters on social life. Because charateristics of social fabrics are decisive for the resilience or fragility of community. While resilient societies are more successful in dealing with these adversity impacts of disasters, they are more effective in bouncing back to the pre-disaster situation and moving this situation to a better level; It is observed that the negative effects of disasters increase exponentially in fragile societies and the post-disaster recovery process progresses relatively slowly.

When the literature on disasters is examined, it is seen that the impact of the disaster is incoincident, but is related to the mutual effects of social interaction and social patterns (Morrow, BH, 1993; Boyce JK, 2000). It is accepted that the effects of disasters are not the same everywhere, they can have different effects in different places, and even within the same place, the effect of the same disaster may have different results. This acceptance has caused the concept of "vulnerability" to be considered together with disasters. This concept is a term used primarily in natural sciences and it is possible to make different definitions. But roughly; It can be defined as the level of risk exposure, resilience and coping capacity (Blaikie et al, 1994).

From the perspective of social sciences, the term vulnerability is not only participating in and maintaining daily life within the framework of the economic, social and political title but also be considered as the level of ability to cope with risk. Vulnerability emerges as a synthesis of the nature-society relationship between political economy and human ecology. According to this approach, "social vulnerability" is the human capacity to cope with the consequences of physical exposure to disasters, return to normalcy and mitigate adverse effects. On the other hand, considering vulnerability as a coping skill determined by pre-risk conditions and experiences, instead of seeing it as a result/outcome of risk, seems inevitable due to the nature of the social one. What is meant by pre-risk conditions is that the characteristics of the person before encountering the risk determine/affect his/her exposure to risk, his/her resistance to risk and his/her ability to cope with risk (Cutter, 1996). For example,

individual characteristics such as age, gender, education affect the response to risk. On the other hand, it is known that the poor and the poverty-stricken communities are more exposed to crises, they have less tools for crisis management, and even minor negativities in their lives reduce their welfare levels (Holzmann, R. and Jørgensen, S., 2000, p.6).

The response of children, the elderly, the sick, and the disabled may not be the same as the response of young, healthy people (Yiing-Jend Chou et al, 2004). Likewise, the characteristics demonstrating the socio-economic level such as the income of the person, the job, family size, etc., the quality and quantity of the house and the infrastructure conditions of the houses determine the level of vulnerability (Evans, GW, & Kantrowitz, E., 2002).

Again, the social characteristics such as education level, level of consciousness, occupation, social security affect the level to measures taken against risk, coping capacity to challenges. On the other hand, the values, traditions and beliefs of the person shape the measures to be taken before and during the risk, the response to the risk and the way of coping with it. All these reasons provide clues as to which groups might be more socially vulnerable in case of risk. The necessity of evaluating various components together in studies on vulnerability complicates and complicates the analysis of the concept.

Although many studies on biophysical and building vulnerability were made and vulnerability standarts were developed. Studies on social vulnerability and how to measure it are relatively new and how it should be measured is more difficult and complex due to the content of the social structure (Susan, L. et al. , 2003, p.243). The vulnerability occurred by the social dimension is often neglected because of the measurement diffuculty. For this reason, it is stated that there is less information about the social dimension of vulnerability for now.

However, it is generally accepted that vulnerability studies have 3 basic approaches:

i) Vulnerability of person or place to unexpected natural hazards - (exposure)
ii) Vulnerability is a social condition (social opposition or acceptance)
iii) It is an approach in which potential exposure and social acceptance are considered together and focused on person and place (Adger, WN., 2001, 2003).

Vulnerability is generally tried to be measured by using the characteristics of individuals such as age, gender, health, income, employment status, race, ethnicity. Using these criteria actually allows us to see vulnerability as a product of social inequalities. Some studies show that illness, disability and being poor are also closely related to vulnerability. These features determine how much individuals will be affected before, during and after the risk and how long it will take to recover from these effects and return to their old days. The location of residence (both spatially, the house and the neighborhood where the house is located, the possibilities and possibilities of the neighborhood) is closely related to individual characteristics. Factors such as the urbanization status of this place, population growth and density, and economic importance determine the vulnerability of the place. Generally, social inequalities determine the place where people live, the quality of the place and the infrastructure possibilities of the place where they live. For example, infrastructure services offered to the poor, such as the places where the poor live, are also poor. Thus, the space and the social are intertwined.

In general, it can be said that there is a consensus on some basic factors that affect/determine vulnerability in social sciences. It is possible to summarize them as follows:

Those with lack of access to resources (including information and technology), access to political power and representation, and those with social capital (including social networks and connections), beliefs

and traditions, and experience and age, physical and/or mental difficulties, infrastructure features impact on vulnerability (Cutter, 2001; Tierney, Lindell, and Perry, 2001; Putnam, 2000; Blaikie et al., 1994). The indicators used to understand vulnerability and their expected general effects on vulnerability include the headings shown in Table-1 (Cutter et al., 2003, p.246).

In summary, various studies, projects and analysis methods have been developed for the social dimension of the concept of vulnerability, and a significant literature has been formed on an international scale for the understanding of the concept of social vulnerability. When compared to physical vulnerability, it is seen that there are relatively less resources and the need for improvement of analysis methods is identified. In our country and from the perspective of Istanbul, which has a great importance in terms of earthquake risk, studies on this subject are definitely insufficient. In this sense, Istanbul Metropolitan Municipality (IMM), Directorate of Earthquake and Ground Analysis conducted a project "Social Vulnerability Analysis against the Earthquake" as a Megacity Indicator System for Disaster Risk Management (MegaIST). Within the framework of the Istanbul Development Agency (ISTKA) Disaster Preparedness Financial Support Program for 2012, 50 neighborhoods from Istanbul were studied by using survey data.

With this survey study and its analysis, data used as a base for measuring the social damage against the possible Istanbul earthquake were produced.

Aim of the Research

The aim of this study is to determine, evaluate and understand the society's perspective on earthquake and its effects, its attitude towards earthquakes, the measures it takes against earthquakes, earthquake awareness, economic structure, health and disability status, level of benefiting from health services, household structure, and social solidarity level for 50 pilot neighborhoods of Istanbul.

Method

In line with the purpose of the study; determination of the data sets that will enable the analysis of the indicators created to measure earthquake-oriented social vulnerability, and designing questionnaires to obtain these data and conducting a survey formed the basis of the project.

Since there is numerical representation in such studies, it is very important to accurately determine the sample that will represent the research universe and to ask the right questions to this sample. A household-based survey conducted in 50 pilot neighborhoods determined by DEZİM in Avcılar, Bahçelievler, Bakırköy, Beylikdüzü, Fatih, Güngören, Küçükçekmece and Zeytinburnu districts. The address obtained from TUIK with the principle of random cluster sampling. The study was conducted on a sample covering 8000 households. In addition, a total of 24,000 household addresses were provided, with 2 spares for each main household. Addresses were uploaded to the survey software and the error of the interviewer was eliminated. After the meeting was made in the main household, the backup digits connected to this main household automatically became passive. In these households, information was obtained by interviewing an individual over the age of 18. In these surveys, the questionnaire consisted of closed-ended questions and the results were analyzed using SPSS. In addition, in-depth interviews were conducted with the Neighborhood Representative of 48 neighborhoods in the neighborhood in order to better understand the preparedness level against the earthquake, Two of the 50 neighborhoods refused to be interviewed.

In this study, an index was developed for the indicator system to measure social vulnerability against the earthquake hazard. Attempting to measure social vulnerability is a multidimensional, complex, and indeed quite difficult process by the nature of the social. Because in the face of a possible earthquake disaster, buildings, individuals and households do not carry the same risk. For this reason, studies to determine that some groups and individuals are more vulnerable on the one hand ensure the effective usage of resources, on the other hand, provide important clues for individuals and groups to be able to carry out capacity-building activities before an earthquake.

The increasing importance of the emphasis on "sustainability" in all kinds of studies carried out in recent years makes the concept of risk more significant. In this study, the social structure was evaluated in terms of vulnerability to reduce disaster risks.

In this study, the factors that increase vulnerability on social fabric were examined, and a questionnaire was developed to see these factors. The questionnaire was applied in 9 districts and 50 neighborhoods in Istanbul. Questionnaire applied to 8000 households within the framework of the address information obtained from TÜİK with the principle of Random Cluster Sampling. While evaluating the results produced, it should not be forgotten that this study is a pilot project.

Under the heading of demographic structure of the household, primarily dependent age distribution, old age, number of households, disability and chronic diseases are discussed. When the obtained results are evaluated, the fact that the research group mostly consists of households with nuclear family structure is considered as a factor reducing vulnerability. In addition, the low number of disability and old age in need of care is seen as a positive component that reduces the level of fragility. In terms of education, low level of higher education is considered as a disadvantage. In parallel, the majority of primary school graduates is a factor that will increase social vulnerability. It is observed that access to health services is at a good level in terms of both physical conditions (closeness to health facilities) and administrative conditions (ownership of social security).

When we look at the results related to the economic situation, it is seen that the rate of households with high earthquake vulnerability is high. Regarding income, the relative poverty level calculated by TUIK for Istanbul was used, using the same method as TUIK. Poor households were determined by comparing the income per household calculated with the survey data with this limit. According to the survey results, 18.4% of the households in the sample are in Istanbul. earns less than 60% of her median income. This means that almost one in five households is low-income. In addition, the correlation between income status and education level was examined and found to be positive. This means that low-income households are also less educated and also less knowledgeable about earthquakes.

When we look at the risk of income sources being interrupted during the earthquake, we see that the vulnerable population is even higher. Households living only on aid constitute 3.05% of the sample. Those who receive monetary or other aid from private individuals and organizations in these households are at risk of being deprived of these benefits during an earthquake. In households with a working income, where they also work in uninsured jobs – approximately 6% of households do not have an insured household – or when they have little work experience – in which 27% of households have five years and less experienced workers – the risk of losing income sources in an earthquake can be expected to be high. According to the subjective evaluations of the households, in 26.26% of the households, all working household members are at risk of losing their jobs. Unemployment draws

attention as a serious vulnerability factor. There is at least one unemployed individual in 13.08% of the households. More than half of the households, 55.7%, live in their own houses. This is an advantage in terms of providing shelter after the earthquake, as well as a factor of fragility in case of damage to the house. The proportion of households owning a house outside the Marmara Region is only 7.5%. Households' savings to be used in an emergency absent in almost 80%. The fact that this ratio is even lower for poor households means that these households will have serious difficulties in meeting their needs. is coming.

In summary, the data on income and wealth indicate that there are significant vulnerabilities in terms of the population represented by the sample, and that these vulnerabilities are in the same direction as those related to educational status. By evaluating the survey data on a neighborhood basis, it is beneficial to determine the settlements where these vulnerabilities are more intense and to take precautions against possible problems that may arise in these areas.

The relationship between the study of social fragility and the study of social inequality is a widely debated topic. As it is tried to be understood in this study, social vulnerability is not the only determinant although it has a very close relationship with social inequality. It is thought that the INCOME status of the households is an important parameter of social fragility, and it offers an initiative that indirectly affects and reveals social inequality in other related fields (education, health, social security, risk preparedness). On the other hand, an important result of this study is that a household that is not economically fragile may be demographically fragile (old age, young child at the age of addiction, crowded households) and/or a household that is economically fragile may be less socially fragile. Similarly, not all economically vulnerable households may have the same social vulnerability risk. On the other hand, economic inequality should be seen as an important parameter of social fragility.

According to the results of the survey, the participants expect a major earthquake in Istanbul (>50%) and think that this earthquake will cause building damage and loss of life in Istanbul (85.3%). It does not consider the institutional activities on risk reduction and the efforts to increase earthquake safety sufficient (50% on average). They do not find themselves prepared for an earthquake (83.4%), but does not expect any damage to its own buildings (37.2%). However, the majority of the participants believe that everything to be done and every measure to be taken will be beneficial in reducing earthquake risks.

Another important parameter is the indicators of social solidarity. It has been observed that the households participating in this research have mostly lived in the same neighborhood for many years, have close relatives and acquaintances and are in close contact with these people. This finding is a positive feature for solidarity during and after the earthquake. However, studies have shown that societies dependent on relatives, acquaintances and traditional solidarity in a disaster situation. They draw attention to the danger that social vulnerability may be very high when the traditional system is dissolved with the traumas to be experienced. For this reason, it is of great importance to give more importance to public and civil society support, not to leave the issue to traditional solidarity, in terms of being prepared for earthquakes.

One of the important components of social preparation is the evaluation and enhancement of local capacity. Research has revealed that the first responders after an earthquake are people living in the surrounding area. In addition, it is stated that in case of a major earthquake, there may be insufficient resources. Therefore, it will be important to be prepared at the neighborhood scale. Various studies

have started and are being carried out in our country for such a preparation. Preparation studies are related with awareness raising, planning, first response and increasing capacity. The questions directed to the headmen od neighbourhood were aimed at understanding the current situation on these issues.

Results shows that education and information activities should gain momentum again, expansion of physical and scenario exercises must be increased, guideline information about disaster plan for the neighborhood must be distributed. In addition, it is understood that almost half of the interviewed neighborhoods do not have areas that can be used as assembly areas or that the existing ones are considered insufficient.

During the study, it was determined that the awareness of the research group and the households represented was at a significant level, but this awareness did not turn into action at the same level. In addition, it is seen that the level of trust of people in the relevant authorities is very low.

In the light of all this information, in order to keep disaster-oriented social vulnerability at the lowest level, all relevant stakeholders (muhtars, local governments, central government units, NGOs, universities and opinion leaders) must involve in a participatory process for creating platforms where strategies for reducing risks, especially awareness raising activities, are determined.

In summary, as stated above, in this project, links were established between the survey questions and social vulnerability indicators, and important findings were obtained for the evaluation of the concept of social vulnerability, both technical and administrative experience gained. In addition, this study will form the basis of the "Disaster-Oriented Social Vulnerability Project" to be made for the whole of for the next year.

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