

The Role of Public Education in Increasing Public Awareness through Mass Media with Emphasis on Newspapers and TV: Coping with Possible Earthquake in Tehran

Naser Charkhsaz, Ashraf Sadat Mousavi, Navvab Shampour

Abstract—This study aimed to evaluate the role of state education in increasing public awareness through mass media (with emphasis on newspapers and TV) coping with possible earthquake in Tehran. All residents aged 15 to 65 who live in the five regions of Tehran (North, South, East, West and Center) during the plan implementation were selected and studied. The required sample size in each region was calculated based on the Cochran formula ($n=380$). In order to collect and analyze the data, a questionnaire with reliability (82%) and a one-sample t-test has been used, respectively. The results showed that warnings related to the Tehran earthquake affected people in the pre-contemplation stage, while public education through mass media did not promote public awareness about prevention, preparedness and rehabilitation.

Keywords—Public education through mass media, public awareness, possible earthquake in Tehran, pre-contemplation.

I. INTRODUCTION

TEHRAN is located in the earthquake-prone area due to its geographical position, climatic conditions and geological conditions; on the other hand, some factors will increase the damaging effects of an earthquake such as poor quality building design, construction and control, vital installations, construction in hazardous areas and poor urban structures.

Casualties and lack of coordination in implementing duties have fallen dramatically in communities with a pre-disaster preparedness plan. However, the current behavior change, which focused on relief and assistance after disasters, requires prevention before disasters occurrence, effective management, education and cooperation [1]. Therefore, the strategy for natural disasters preparedness to minimize the damaging effects has shifted towards public awareness with an emphasis on informing people of preventive measures. This shift has been the main objective of the plan for mitigating the impact of natural disasters in the past two decades. That is because disaster prevention is better than response. In fact, one of the main focuses of applying the family and community-based public education programs is to mitigate the damage caused by natural disasters. Therefore, knowing what the reaction would

be at the time of incident, as well as in what position each individual would be while at home, at work, and on the street, is important in order to be better prepared. Thus, it seems that we should prepare local rescue teams according to our slogan “one rescuer in each family”. To this end, some points need to be considered including familiarizing people with various effective educational methods, positions strategies, involving them in most programs, assigning responsibilities, and speaking generally, and designing programs of a community-based nature. Through these actions, every individual can receive the necessary awareness and understand their needs and also ways to meet them. In this way, everyone can help himself, as well as the others, psychologically and physically if necessary. Improving knowledge about incidents and disasters enables people to understand how to set themselves and others free from a sudden danger caused by incidents and disasters. Based on public education programs to deal with natural disasters, particularly earthquakes, the responsibilities of servicing, welfare and improvement processes are transferred or assigned to individuals, families and the community; therefore, members of civil society should be informed of their responsibilities to protect themselves and others. The degree of awareness of individuals regarding the dangers of natural and man-made disasters must be increased through advertising and education, which mostly happen through mass media. Actually, increasing knowledge and awareness in dealing with disaster must be a goal for people to be prepared. However, the obtained statistical results of disaster-prone countries show that prevention along with proper and comprehensive training of people and making them active may reduce possible damages [3].

Knowledge promotion and public awareness are important factors in reducing the negative and destructive impacts of natural disasters; thus, the main concern of policymakers is to find appropriate methods for transferring educational concepts. The unique role of mass media is to inform and guide public opinion. Also it should be mentioned that one the main role of mass media is already to inform the public about events and disasters, but now it has intended as a guide for changing social behaviors and modeling in the community [2].

Globally today, mass media plays a very important role in disseminating new information and affecting public opinion. Also, it has special significance due to rapid development in the information age and the need for greater exchange between

Naser Charkhsaz and Navvab Shampour are affiliated with the Iranian Red Crescent Society, Iran, Islamic Republic Of (e-mail: naser_charkhsaz@yahoo.com, navvab_shampour@gmail.com).

Ashraf Sadat Mousavi, Researcher, MA in communication, also is affiliated with the Iranian Red Crescent society, Iran, Islamic Republic Of (e-mail: ash_mousavi@yahoo.com).

traditional and modern systems to the extent that some scholars believe the development of economic, social and political systems, the advances in media, and finally communication technologies, are interdependent.

By moving from simplicity to complexity in society, the exchange of information and communication has become more important and complex and the communication system accepts various roles. About mass media, the investigators have identified patterns of behaviors. Thus, due to the status of mass media in society, it should meet audiences' expectations with different activities in the social, political and recreational fields [3].

Examining effective ways to prepare people to deal with events and disasters, especially earthquakes, has always been a major concern for state authorities. Meanwhile, an investigation of the unique role of mass media and the degree of its impact on saving the lives of people has been very important in our country. Thus, evaluation of the impact of the mass media programs, particularly TV programs and newspapers, on increasing public awareness are an undeniable necessity. By realizing the degree of impact of media on people's preparedness to deal with incidents and disasters, stakeholders in the country can help to reduce death tolls and injuries caused by accidents and disasters through the careful planning and strengthening of educational programs.

This study aimed to investigate the effects of public education through mass media (with emphasis on newspapers and TV) and measure its influence on public awareness.

II. RESEARCH METHODOLOGY

In this quantitative survey, the role of the mass media on the awareness of society was studied using questionnaires. All residents (aged between 15-65 years) residing in the five regions of Tehran City (North, South, East, West and Center) were examined during plan implementation.

The researchers of the present paper had some reason for selecting this age group and these five regions; firstly, because most of the potentially active populations are in this age group in Tehran (also in the country), then these regions were selected because it was expected the level of people's awareness and self-care to be close to each other with regard to disasters.

In this paper, Tehran is divided into five regions: North, Center, South, East and West and a district was selected from each region randomly. Approximately 380 residents were studied in each region based on the Cochran formula. For sampling, the number of units was selected randomly in each region.

A two-part questionnaire was used to collect data and information, as follows:

- A) Demographic information.
- B) Questions related to the variable in the pre-contemplation, contemplation, preparation, and action stages in coping with disasters.

In order to assess the questionnaire, content-related validity was used. For this purpose, the survey questions were prepared by the researchers with referring to scientific texts

and theories related to the research topic [4]-[6]. The content validity of the questionnaire was confirmed by the judgment and distributed among the statistical population. Also, Cronbach's alpha coefficient was used to assess the reliability (82%).

III. FINDINGS

According to the findings: Of the 1,900 samples, 1,397 were women (73.5%) and 503 (26.5%) men; the most frequency age distribution related to 15 to 26 years old (42%) and the lowest frequency related to the age 56 and older (8%); the most frequency of education was related to people with under graduate diplomas (32%) and the lowest frequency was related to people with associate degrees (11%); finally, the frequency of persons from highest to lowest is as follows: 520 housewives (27%), 449 self-employed (26%); 321 employees (17%); 280 unemployed (15%); and, 280 students (15%).

IV. DATA ANALYSIS

A. Interventions for Pre-Contemplation Stage

Hypothesis 1: Public education through mass media in the pre-contemplation stage is appropriate in coping with disaster.

TABLE I
 DESCRIPTIVE RESULTS OF ONE-SAMPLE T TEST ON THE SUITABILITY OF PUBLIC EDUCATION THROUGH MASS MEDIA IN DEALING WITH DISASTERS IN THE PRE-CONTEMPLATION STAGE

Number	average	SD	Standard error mean	Average
88	3/25	1/68159	0/07266	The suitability of public education through mass media in dealing with disasters in the pre-contemplation stage

TABLE II
 RESULTS OF ONE-SAMPLE T TEST

Test Value = 3					
Confidence interval		Mean differences	Significance level	Degree of freedom	t
low limit	upper limit				
0/4785	0/1897	0/3341	0/000	87	4/598

According to the one-sample t-test ($P_{value} = -0/05$); it concluded that the null hypothesis is rejected $H_0: \mu \leq 3$ and the alternative hypothesis is confirmed $H_1: \mu > 3$. This means that public education through mass media in the pre-contemplation stage is appropriate in dealing with disasters.

B. Interventions for Contemplation Stage

Hypothesis 2: Public education through mass media in the contemplation stage is suitable for dealing with disasters.

TABLE III
 DESCRIPTIVE RESULTS OF ONE-SAMPLE T TEST ON THE SUITABILITY OF PUBLIC EDUCATION THROUGH MASS MEDIA IN DEALING WITH DISASTERS IN THE CONTEMPLATION STAGE

Number	average	SD	Standard error mean	Average
88	2/36	1/234	0/0123	The suitability of public education through mass media in dealing with disasters in the contemplation stage

Based on the one-sample t-test ($P_value=0/05$); it can be concluded that the null hypothesis is accepted $H_0 : \mu \leq 3$ and the alternative hypothesis is rejected $H_1 : \mu > 3$. It means that public education through mass media in contemplative stage is not appropriate in dealing with disasters.

TABLE IV
 RESULTS OF ONE-SAMPLE T TEST

Test Value = 3					
Confidence interval		Mean differences	Significance level	Degree of freedom	t
low limit	upper limit				
0/326	0/1236	0/2356	0/111	87	3/598

C. Interventions for Preparation Stage

Hypothesis 3: Public education through mass media is appropriate in the preparation stage in dealing with disasters.

TABLE V

DESCRIPTIVE RESULTS OF ONE-SAMPLE T TEST ON THE SUITABILITY OF PUBLIC EDUCATION THROUGH MASS MEDIA IN DEALING WITH DISASTERS IN THE PREPARATION STAGE

Number	average	SD	Standard error mean	Average
88	2/37	1/123	0/0123	The suitability of public education through mass media in dealing with disasters in the preparation stage

TABLE VI
 RESULTS OF ONE-SAMPLE T TEST

Test Value = 3					
Confidence interval		Mean differences	Significance level	Degree of freedom	t
low limit	upper limit				
0/412	0/132	0/2653	0/120	87	3/598

According to the one-sample t-test ($P_value=0/05$); it concluded that the null hypothesis is rejected $H_0 : \mu \leq 3$ and the alternative hypothesis is confirmed $H_1 : \mu > 3$. This means that public education through mass media in the preparation stage is not appropriate in dealing with disasters.

D. Interventions for Action Stage

Hypothesis 4: Public education through mass media is appropriate in the action stage in dealing with disasters.

TABLE VII

DESCRIPTIVE RESULTS OF ONE-SAMPLE T TEST ON THE SUITABILITY OF PUBLIC EDUCATION THROUGH MASS MEDIA IN DEALING WITH DISASTERS IN THE ACTION STAGE

Number	average	SD	Standard error mean	Average
88	2/14	1/265	0/0123	The suitability of public education through mass media in dealing with disasters in the action stage

TABLE VIII
 RESULTS OF ONE-SAMPLE T TEST

Test Value = 3					
Confidence interval		Mean differences	Significance level	Degree of freedom	t
low limit	upper limit				
0/413	0/163	0/2456	0/127	87	3/986

According to the one-sample t-test ($P_value=0/05$); it

concluded that the null hypothesis is accepted $H_0 : \mu \leq 3$; and the alternative hypothesis is not confirmed $H_1 : \mu > 3$. This means that public education through mass media in the action stage is not appropriate in dealing with disasters.

V. DISCUSSION AND CONCLUSION

According to the results of this research, mass media (newspapers and TV) could only be effective in issuing Tehran earthquake warnings in the pre-contemplation stage. Many studies showed that prevention is most effective in reducing the devastating effects of an earthquake; while most people are careless about preparedness for earthquakes.

Recent studies show that most people believe they are defenseless against earthquakes and a large number of people believe in a predetermined fate. With this thought, they do not desire to be prepared or respond appropriately to the warnings. However, it is not clear whether educational programs can change this attitude [4].

According to the previous studies, the causes of educational program failure is due to lack of specialists for designing appropriate programs and lack of consistency between contents and structure of messages; actually the risk will be discussed and explained in detail without providing a way or strategy to deal with it [5].

According to the study, some items were proved, such as falseness of hypothesis and uniformity in society (it means different groups of people receive the same information and educational materials) [5].

In fact, there has been much debate about public education both in developed or developing countries. Public education is crucial as an important component of preparedness, since governments alone have failed to carry out the necessary preventative measures and respond to natural disasters, such as earthquakes.

What is certain is the fact that there is still a considerable need for further study and research into the field of public education, both in developed and developing countries. Public education as one of the key components of disaster preparedness, it is of significant importance because government alone cannot take the necessary measures to prevent and deal with the consequences of natural disasters such as earthquakes.

In order to provide educational content and to develop appropriate, acceptable and understandable programs designed to reach all people in society, the first step is to assess the knowledge, attitude and performance of the population, especially those groups at risk.

The present research showed that the elderly and the uneducated or poorly educated population are the most susceptible to disasters because of their lack of knowledge of earthquake or disaster preparedness [5]-[8].

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