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## The Impact of Visuals: Using Television Program to Transform Environmental Health Concepts to People

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**Abstract:** This study intended to determine the impact of television in training the concept of environmental health to the people. The main emphasis of environmental health lies on issues including water, soil and air. A quasi-experimental study was designed and 340 subjects were selected randomly from Yasouj, Iran. After determining educational goals of study, a questionnaire was prepared as pre and post test. Based on educational contents, 3 movies were produced in different field of environmental health including water, clean air and waste material. Participants responded to pre test 2 weeks before showing movies through provincial TV channel. Two weeks after broadcasting films, the post test was conducted. The results indicated that majority of the samples were male (55%) and married (79.7%). The mean age of the samples was  $28.11 \pm 10.18$  years. The mean of year of studies of participants was  $8.64 \pm 4.28$ . A significant relationship was observed between level of knowledge and either educational background or occupation of subjects ( $p < 0.05$ ), hence, there were no relations between respondents' awareness and their age, sex, marital status and family dimension. Majority (73.97) of subjects believed that more vulnerable groups for water pollution are children that after watching educational movie this amount increased to 96.42. Only 27.5% of respondents had awareness about the most important sources of air pollution in the world. The results indicated that intervention of education embodying environmental health will be more fruitful if it is conveyed through television and will result in heightening the social awareness.

**Key words:** Mass media, television, environmental health, education, safe drinking water, air

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### INTRODUCTION

Among the wide diversity of media, radio and television have outstanding position because of the informal teaching purposes they potentially retain (Tankard and Severin, 2000). It has always been believed that educational television can aid transmission of information and help reinforcement, learning and application of particular skills assisting learning procedure. Television should be able to promote public culture and highlight issues such as, public health, traffic, social relations etc. and require producing films on these issues for more appropriate changes in the society (Mohsenian and Malekzaden, 1997). In recent decades, the application of mass media resulted in heightening the level of education and caused more efficiency in educational system. The spread and development of television in three decades after the Second World War paved a new ground of modern communication. It seems that ubiquity of television is due to the convenience and accessibility of it in addressing all people and teaching

them through easiest method, as people are more inclined to learn something through the easiest way possible (Buren, 2000).

Currently, media offers a lot of information on health issues. In 1990, at least one fourth of the American daily newspapers contained health-related articles. In local American television news, stories on health were among the most common topics. In 1998, American television showed 17 commercials at every hour containing health information. Thus, what is the role of this large amount of health-related information on people's lives. Several researchers have studied the effects of media on public knowledge and behavior (Byrd-Bredbenner, 2000).

Media are appropriate sources of information for enhancing knowledge on health or medical issues. Relationships have been found between medical information in a television drama and people's knowledge about the topic, as well as between an educational television programme and the level of nutritional knowledge (Alcalay and Bell, 1996).

Television commercials, an information series broadcast as part of the evening news and an information booklet were used to try to make American women with little information thinking about quitting smoking (Freels *et al.*, 1999).

Both awareness of and use of folic acid had increased in the Netherlands after a mass media campaign for the periconceptional use of folic acid that started in 1995. It has been found, furthermore, that a soap opera on television was effective in persuading people to take bone-marrow tests, in order to find suitable bone-marrow donors for people suffering from leukaemia (Walle *et al.*, 2002).

The influence of media information on the changes of health behaviour is not always strong. In one study, the information was mediated through both print and electronic media, all in the Vietnamese language; however, the intervention only managed to promote general check-ups and Pap tests. In other words, the intervention did not have positive effects on promoting currency for any of the tests. The researchers drew the conclusion that a media-based intervention alone could only perhaps lead to better consciousness, but not to behavioural changes in any greater extent (Jenkins *et al.*, 1999).

According to the definition adduced by World Health Organization (WHO), environmental health refers to the control of all elements of our life environment that are/will be influential in one's mental, physical and social health (López-Sosa and Tévar, 2005). The significance of protecting the environment is quite evident at the present time. Implementation and application of any program undoubtedly requires sufficient knowledge on the environment and anything that pollutes and contaminates it. Contamination of the environment is considered an alarming threat for all living beings on the earth. Therefore, all of us, as conscientious human beings, should assume responsibility and be completely aware in this regard (Dasgupta *et al.*, 2005).

The quality of the air changes everyday and even every hour. Environment Protection Agency (EPA) of the United States and other contiguous agencies attempt to report information related to the air quality so that it can be understandable to the public. What the civilized man of today demands more, is the clean and fresh air. Besides the physical and mental perils, one of the most disturbing perspectives of air pollution is economic losses (Vandenberg, 2005).

Nowadays, due to the multiplicity and wide spread of microbes and diseases, there is great concern and attention to the removal of waste materials. Disinfection using microwaves, sterilization by steam and chemical disinfection are modern techniques developed in recent years for preliminary refinement of

waste materials that have been replaced instead of burial or burning of the garbage (Saker *et al.*, 2004).

In many developing countries, there is not adequate service for removal of waste materials and refining the sewage. Furthermore, many industrial factories do not abide by the environmental rules. As a result, the residents of such societies have low level of health and suffer from environmental issues. In such communities, in order to keep balance between the environment and the population growth and between economic development and the growth of urbanization, there needs to have enormous capital investment. It is about few decades that man's dwelling place has been threatened by the world's industrialization and accumulation of waste materials that will result in threatening public health if decreasing the pollution is not taken into serious consideration (Groom, 2008; Asgharnia, 2002).

According to the statistics presented by World Health Organization (WHO) in 1980, 25000 people die everyday because of consuming contaminated water. Statistics indicate that one fourth of the beds in hospitals belong to the patients suffering from drinking polluted water.

Health of water, therefore, is one of significant issues in human society and that provision of healthy drinking water is based on multi-facet cooperation, awareness and education of people in the consumption and maintaining water resources. Education of hygiene is one of fundamental principles in providing better Preliminary Hygienic Services (PHs). Obtaining information about people's level of awareness on health and hygienic issues is quite indispensable for planning and providing hygienic services (Asgharnia, 2002). The present age is a combination of information and communication; an age in which man needs to have more information and better communication (Asnafi and Hamidi, 2008).

Comprehending the importance of environmental pollution will elicit and provoke people to do something for the reduction of it. To attain such a purpose, mass media should assume responsibility and convey necessary information to people.

In this regard, the researchers were intended to determine the effect of television in teaching the concept of environmental health to the people of Yasouj. The main emphasis of environmental health lies on issues including water, soil and air. This research also scrutinizes issues as health of water, air and removal of waste materials accordingly.

## **MATERIALS AND METHODS**

The present research, as a quasi-experimental study, aims to determine the effect of television in teaching the concept of environmental health and was conducted from

November 2007 to August 2008. Thanks to the daily development of science and technology, mass media are considered valuable means for promoting the public knowledge and of course television, is believed to be the most penetrating and pervading medium addressing the vast majority of people from various levels and social classes.

Study population was all residents of Yasouj, a city located in the Southwest of Iran. Three hundred and forty Yasoujians residents from both genders were selected and scrutinized randomly. It is worthy to note that for the selection of the samples, we had to refer to census offices available in five health centers of Yasouj. These centers update their information every year about the families who are under their supervision and support. Certain families were chosen quite randomly and their full addresses were given to us by the census offices.

In the present research, at the first step, the educational content was determined in three distinct fields of water, air and waste materials. Considering the fact that the length of the program can be influential on the respondents, it was attempted to produce films to convey the message clearly in the shortest possible period to be able to draw wider range of viewers. Having done the indispensable coordination with IRIB (Islamic Republic of Iran's Broadcasting), the structure of movies are determined and all engaged agents are selected. Various items are employed in these movies to make the program more appealing and attractive. They include performer, experts and reports.

The content of the program is written by an expert and well-experienced writer in the field of environmental health and in accordance to the taste and culture of the subjects. Accordingly, based on educational contents three ten-minute's films were produced by experts (senior producer of radio and television) regarding the environmental health and on issues of water, air and waste materials.

The data collection instrument (pre-test and post-test) consists of four sections: demographic characteristics and hygienic information on water, air and garbage that were completed by trained interviewer referring to people's houses.

Two weeks after the completion of the pre-test, three documentary films regarding the hygiene of water, air and waste materials were broadcasted on Saturday, Monday and Wednesday through local television of the province. They were shown at 20:30 that was assumed to be the most appropriate time for people to watch television. Two weeks after the broadcast of the films, post-test was completed.

**Statistical analysis:** Analysis and interpretation of data are carried out by SPSS version 15. The analysis and interpretation are presented in two levels of descriptive and inferential statistic. In the level of descriptive statistics, all independent and dependant variables as well as their indicators were show in percent and in the form of frequency distribution table. In the level of inferential statistics, due to the various levels of variables, data were analyzed using student t-test, Chi-square and the significance level was considered less than 0.05 ( $p < 0.05$ ).

## RESULTS AND DISCUSSION

The results indicated that 55% of the samples were male. The mean age of the samples was  $28.11 \pm 10.18$  years. 79.7% of the samples were married. The mean of year of studies of participants was  $8.64 \pm 4.28$ . The mean and standard deviation of family dimension were 6.03 and 2.12, respectively (Table 1). The level of employee's awareness on water, waste materials and the whole concept of environmental health were higher than the others. Whereas, concerning the hygiene of air, workers had higher level of information. A significant relationship was observed between level of knowledge and either educational background or occupation of subjects, hence there were no relations between respondents' awareness and their age, sex, marital status and family dimension.

One hundred and forty four people (42.35%) of the respondents fail to watch the films and only 196 people (57.64%) could watch them. The mean of people's awareness that succeeded to watch the films was  $13.30 \pm 5.2$  whereas; the average of people's awareness that failed to watch them was  $8.01 \pm 3.64$ . There was a significant statistical difference between the averages of these two groups ( $p < 0.01$ ).

The results revealed that after showing TV film awareness of subjects improved in all aspects and the increase in level of awareness on waste material was more conspicuous (Table 2).

Table 1: Socio-demographic characteristics of subjects

Characteristics	No.	%
<b>Sex</b>		
Male	187	55.00
Female	153	45.00
<b>Marital status</b>		
Single	69	20.29
Married	271	79.70
<b>Educational level</b>		
Illiterate	28	8.23
Primary	54	15.88
Secondary	71	20.88
High school	119	35.00
Academic	68	20.00

About 70% of the subjects rightly pointed out the association between garbage and diseases. Only 35% of the subjects seemed clear about the correct method for removing hospital wastes (Table 3).

Majority of them were of the view that more vulnerable groups for water pollution are children. Two third of the subjects were aware which types of diseases can transmitted through polluted water. The knowledge of subjects was poor regarding the steps of water refining (Table 4).

In general awareness of subjects regarding air pollution was poor compare to the other concepts (water and wastes). Only 27.5% of respondents had awareness about the most important sources of air pollution in the world. Less than half of subject had a clear definition of air pollution. About one third of them believed that plants

can help to avoid air pollution which increased after showing film to more than two third (Table 5).

Mass media offer effective channels for communicating health related messages, which can increase knowledge and influence behavior of audience members (Brodie *et al.*, 2001). Broadcast media have the ability to disseminate information to large audiences efficiently and television can be a particularly important channel (Movius *et al.*, 2007).

The results of the present research denote that intervention of education embodying environmental health will be more fruitful if it is conveyed through television and will result in heightening the social awareness. This study provides further evidence of the power of Television program to motivate its viewers to enhance health knowledge and consequently change health behavior which is in agreement with the result of

Table 2: Effect of TV on respondents' knowledge regarding different aspects of environmental health

Knowledge	Wastes	Safe drink water	Air pollution	Total
Pre-test	2.80±2.47	2.84±2.41	2.02±2.13	7.66±6.92
Post-test	5.02±1.66	4.52±1.89	3.77±1.87	13.30±5.20

Data was express Mean±SD

Table 3: Knowledge regarding Garbage (n = 196)

Item	Correct response				$\chi^2$ -value	df	p-value
	Pre test		Post test				
	No.	%	No.	%			
Q1	112	57.14	163	83.16	52.90	1	0.000
Q2	94	47.95	172	87.75	25.20	1	0.000
Q3	138	70.41	194	98.97	4.80	1	0.028
Q4	53	27.04	127	64.79	39.46	1	0.000
Q5	83	42.34	175	69.28	17.27	1	0.000
Q6	69	35.20	151	77.04	31.73	1	0.000

Table 4: Knowledge regarding safe drink water (n = 196)

Item	Correct response				$\chi^2$ -value	df	p-value
	Pre test		Post test				
	No.	%	No.	%			
Q1	103	52.55	147	75.00	72.35	1	0.000
Q2	99	50.51	132	67.34	96.99	1	0.000
Q3	43	21.93	98	50.00	55.08	1	0.000
Q4	66	33.67	137	69.89	42.85	1	0.000
Q5	101	51.53	182	92.85	16.02	1	0.000
Q6	145	73.97	189	96.42	20.63	1	0.000

Table 5: Knowledge regarding air pollution (n = 196)

Item	Correct response				$\chi^2$ -value	df	p-value
	Pre test		Post test				
	No.	%	No.	%			
Q1	85	43.36	159	81.12	34.92	1	0.000
Q2	117	59.69	161	82.14	70.59	1	0.000
Q3	54	27.55	118	60.20	49.26	1	0.000
Q4	61	31.12	139	70.91	36.31	1	0.000
Q5	80	40.81	165	84.18	25.39	1	0.000

the other study that showed rising in environmental literacy in response to television show (Kennedy *et al.*, 2007).

Likewise, the research conducted in Zanjan Province regarding AIDS indicates that educational program on hygiene has left tremendous impact on both the level of awareness and on people's approach (Vakili, 1998). In a research conducted by Sadri (1999) on the villagers of Hamedan Province it was determined that the level of awareness among people with low level of literacy is meaningfully lower than that in literate people.

Despite the effort of researchers and television personals to choose the most appropriate time for the broadcast of the films 42.35% of the respondents failed to watch the film that it was due to their lack of information about the broadcast time of the films. Definitely, if all respondents could watch the films, the difference in the average of awareness would be more noticeable. Therefore, it is wise to remove this problem in future studies.

### CONCLUSION

Considering the fact that realizing the significance of environmental pollution can elicit people's sensitivity and persuade them to take more active role in the reduction of it, people should be trained in this regard through mass media specially television.

The Ministry of Health, as the main and responsible authority of public health, should promote people's level of awareness on health issues with the cooperation of national/local television with due consideration to the cultural elements of local communities.

It also provides a successful example of a mutually beneficial relationship between public health professionals and television writers to increase accuracy of health content in television shows and concurrently strengthen the entertainment value of these shows. Lessons learned can inform other public health initiatives.

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