

DOI: 10.5455/msm.2014.26.137-140

Received: 15 October 2013; Accepted: 25 January 2014

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## REVIEW

Mater Sociomed. 2014 Apr; 26(2): 137-140

# Public Awareness on Cancerous Substances

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## ABSTRACT

The public can be defined as a mosaic consisting of various ethnic, religious and other social groups, hence the definition of public includes each individual persona. Public opinion is the voice of such public and is, therefore, considered a worthy element in political and economic discourse. Media can do much in providing education necessary for informing the public about cancerous substances in the environment. The purpose of this study is to inform the public about issues that truly matter instead of following the current trend and focus on the topics and issues of less importance.

**Key words:** the public opinion, cancerous substances, environment, awareness, communication competency.

## 1. INTRODUCTION

Unlike the public in general, which generally can be interested in private and public issues alike, the public opinion is exclusively focused on the public issues. The public opinion is formed as a result of social and psychological interaction of the people who communicate their opinions about the relevant social issues (1-10). Respectively, the public opinion consists of the comprehension of a certain issue, of contemplating on it and subsequently of drawing conclusions and creating an opinion. Proper information providing directly corresponds the democratic political system, which gives the right to each individual to be provided with all the information on public relevant issues. The secrets of the states are excluded from this right which is regulated by law (11-15).

## 2. LEGAL AND LEGISLATIVE REGULATIONS ON INFORMATION

The Access to Public Information Act was passed in 2000. 'The purpose of this Act is: a) to establish that the information under the control of public services is public property and that the public access to such information requires greater transparency and responsibility of such public services. Such information is relevant for the democratic processes; b) to determine that each person has the access to the information and that one should access them having the best interest of public in mind, whereas the public services have the obligation of disclosure of such information; and c) to enable each person to demand the alteration of the information and to make a comment on one's personal information in the possession of the public services' (the Law on Access to Public Information in Bosnia and Herzegovina; 2000; Article 1.). However, many questions

arise regarding models of public informing used by the state services and the legislation system. The model of propaganda and publicity, the model of public informing, bidirectional asymmetrical and bidirectional symmetrical are some of the models of public informing.

The propaganda and publicity model (Publicity is a form of free presence of a certain organization in the media. Relevant to one organization is only the time and space it takes in the media. The publicity is measured by analyzing media content i.e. press clipping.) is based on maximum exploitation of advertising and publicity disregarding whether the publicity is a positive or a negative one. This model considers any presence of the advertised subject to be positive publicity and does not entertain the public opinion. The model of public informing is based on business and political use of media in any way available. This model provides the information to the public but it has no interest in the feedback. In this case, the information is carefully presented as a positive one, but the public opinion is again avoided.

The bidirectional asymmetrical model is also known as the manipulative model of public relations. It is based on a theory that the public can be convinced only things that are in its best interest. This model establishes a two-way communication, but it is asymmetrical because it persuades and manipulates without creating comprehension and cooperation. The development of the bidirectional symmetrical model enabled the creation of the modern public relations (The purpose of public relations discipline is to determine that certain communication activities cause certain consequences, which could reflect on economy law of offer and demand). This model emphasizes the feedback and its basic purpose is comprehension in exchanging information

between the institutions and the public. The bidirectional symmetrical model is considered more morally acceptable and more efficient than the previous three models.

Modern processes of globalization (and the most important of them would be the process of globalizing of economy (OECOGLOBAL)) have contributed greatly to the increased use of chemicals in the world, which affect all the aspects of human life and mostly human food. The common root of the issues regarding the lack of chemicals and regarding their global use is in the manner of use of modern technology unavailable to the public because it is in possession of multinational corporations. The owners of such corporations often neglect the principles of social responsibilities that corporations have and one of them certainly is the care about consequences that their products may cause. They are often focused on their own interests in profit (several paragraphs from Adam Smith's "Wealth of the People" offer a fine). The interest of the producers in the market is to maximize their profit. Corporative communication in such cases becomes manipulative and in service of propaganda. The research has proved that the risk assessment of the long-term use of additives for example is never published.

### 3. CANCEROUS SUBSTANCES IN FOOD

Cancerous substances in the environment are not only in food, but also in almost all of the aspects of human life, but because of human need to take food this study will mostly focus on the cancerous substances in food. The scientists have been publishing their studies as a warning that many additives to food (marked with E-numbering) have negative effects on human organism. Some of the effects are hyperactivity, allergic reactions, headaches and metabolic disorders.

The institutions responsible follow and react too slowly regarding such findings and the food industry usually disregards the results because of its own benefit. The additives are usually presented on the packages of food products as three-figure numbers and before the number, there is a letter E. The letter E stands for the additives used in Europe. If an additive has an E as a mark that means that it had undergone certain procedures of health control. However, disregarding the controls and the marking, a large number of additives damages human health, if they are taken in quantities above the recommended ones per day. They can cause disorders and even illnesses to some people.

Some additives can cause very anxious even aggressive behavior in children. The E123 is a very dangerous additive and it is banned by the World Health Organization! Various tastes and lovely flamboyant colors of juices and sweets are sometimes the result of use of toxic additives like E 129, E 102, E 122, E 124, E 210, E 211 and E 110. These additives can be found in ready-made sauces, some gummy bonbons and chocolate bonbons, sweet cream, some kinds of melted cheese and some of delicatessens, puddings, tin cans, ready-made soups and ice creams. The official name for E 123 is Amaranth after the plant from which it is extracted. The use of this additive causes allergic reactions in many people. It also causes asthma, eczema and hyperactivity.

During the animal experimentation stage, it is observed that the E 123 additive causes defects or death of the fetus as well as cancer. The synthetic match to the E 123 is the E 129, which was created to replace the Amaranth, which was banned in the 1980s due to the evidence of its toxicity. The E 129 is an extract of orange color, which is added to sweets, beverages,

confectionery and cosmetic products. This additive, too, causes allergic reactions mostly to people who are allergic to aspirin and to people who suffer from asthma, but also to those with sensitive skin. It is considered to be responsible for the appearance of cancer in laboratory mice. This additive is not accepted in many countries of the Western Europe. The public however has the right on every information and warning. By informing the public, a democratic principle of right-to-know is saw through and the warning supports the European principle of caution.

Informing the public is usually done using the model of public informing most commonly in the service of political and of non-profitable organizations. The fact that the bidirectional symmetrical model is only barely used by some companies is a discouraging one. The result of such communication limits is the public which is not informed properly, and if the political institutions mostly use the model of public informing then it can be easily concluded that they are using the model for creating a civil society.

When there is a passive public then the only model applied was propaganda. Propaganda will try to persuade the public, to influence the opinions of individuals without asking for a feedback from the very public it is trying to influence, because the public will perceive the information just as the instructors and the designers originally wanted it to perceive. Much information giving from the ministries and state services is based on the same principles as propaganda, which means that they persuade, influence but they do not require feedback. Yet they know that the public will react in the required manner.

The progress of the society depends on cooperation among the people and the cooperation with the institutions. Such cooperation is regulated by laws, which means that it is ruled by laws, not men. The systems of communication can do a great deal to educate the public on cancerous substances in the environment but they are more focused to the lesser, more specific purposes. The first and primary specific purpose should be the education of the population because in complex circumstances, the people are not supposed to think, but to listen (and they should listen so they could apply what they heard). All the other forms of participation of the people should be based on reflection. In Bosnia and Herzegovina (BiH), the phase of reflection is omitted. Every day the input that an average citizen of BiH gets from the institutions contains negative terminology.

There are many toxic additives and one should avoid nitrates and semi-phosphates, which are the most dangerous ones. For example, the nitric salt when bonded with the proteins in soybean or meat produces nitrosamine, which is cancerous to all the organs. Ice and emulsifiers are also put into the mix to help unify and shape the mass. Those mixtures have very little meat content, but are mostly made of mechanically processed meat without bones and additives. Otherwise, it would be impossible for the price of salami to be lower than the price of raw meat. By adding soy emulsifier, sugar, vitamin C and carrageenans it is made possible. The Netherlands, Germany and France have banned the use of such mixture in the diet of people and animals.

Aside from additives, there are also aflatoxins and heavy metals. The aflatoxins are toxic substances of *Aspergillus Flavus* species of mold and they are well known cancerous substances. Modern research results prove that they are cancerous to humans and animals alike. The aflatoxins are present in many forms of food originating from tropical regions, especially in imported

ground almond, pistachios and in corn. If the cattle eat moldy hay, the aflatoxin is excreted in the milk it produces.

Many countries have enforced regulations which enable the intake of aflatoxins with food. Aside from the strict control and defining the limit of the presence of that toxin in food, there are also prohibitions of feeding dairy cows with pistachio flour. Food products control has had a significant success and the samples taken from milk and fruits imported from the tropical regions prove that the presence of aflatoxins has dropped to a minimum. It is well known that these cancerous substances cause liver cancer. Heavy metals got their name because they have density over 5 g/cm<sup>3</sup>. They could participate in food as a part of environmental contaminants. The heavy metals that commonly pollute the food are lead (Pb), mercury (Hg), cadmium (Cd) and arsenic (As). Lead is usually deposited in bones, liver, kidneys and soft tissues.

Lead poisoning affects the functions of the brain and nervous system, it decreases the level of intelligence, observation capacities and memory. The most acute forms of lead poisoning cause death. Mercury (Hg) is a heavy metal and it is introduced into food via pesticides. Mercury is toxic as a chemical element and in all its compounds. The symptoms of mercury poisoning are focused in the digestion organs and afterwards in nervous system.

Cadmium is introduced into food from the natural environment. High level of cadmium in the kidneys can cause the damage to the kidney tissue and help forming the kidney stone and it causes the rise of the blood pressure. Cadmium affects the structure of bones causing bone deformation. It commonly causes anemia, heart damage and kidney damage. It is also a cancerous substance.

Arsenic is less toxic than the other heavy metals. Arsenic in organic compounds (As<sup>5+</sup>) and arsenic as a free element is not toxic unlike inorganic trivalent arsenic (As<sup>3+</sup>). Arsenic can be accumulated in a body especially in the skin, the hair and some internal organs. Arsenic poisoning causes hair fall out, dermatitis and some problems to the digestion organs, fatigue, headaches, confusion, psychological problems and some deformations of the kidneys.

On July 27<sup>th</sup> 2004, the parliament of Bosnia and Herzegovina has passed the Law on food on the session of the House of the Nations. The Law was fully congruent to the Article 4 a) of the constitution of Bosnia and Herzegovina. This Law presents the general principles regarding food for both human and animal nourishment, especially the principles of health safety and food quality on the territory of Bosnia and Herzegovina. It establishes the procedures regarding problems, which may directly or indirectly affect health safety and quality of food. Article 5 of the Law on food is focused on risk assessment. Risk assessment is performed by the Agency coordinating its investigation with the official services in the entity and in the Brcko District.

According to the Article 6 of this Law, the information on the risk is to be presented by the Agency in such manner that all the official services, parties involved in human food and animal food production, consumers, other relevant institutions and interested parties could timely receive a reliable, objective and comprehensible information on risk regarding food for human use and for animals.

The risk represents biological, chemical or physical factor in food for human use and for animals and the state of that food which may have negative effects on health of human beings or

animals. Should there be a reasonable doubt that the food could be a risk for the health of human beings or animals, the Agency is obliged to inform the public about the health risks. It is necessary to specifically identify the food and to state the type of food, the risk that it presents to the health and the measures to be taken to prevent, minimize or remove the risk.

According to the Article 14, the food that carries risk to the health is:

- a) the food that contains microorganisms or parasites that endanger human health, bacterial toxins, mycotoxins, histamine and other similar substances, similar microorganisms or parasites above the permitted quantities;
- b) the food that contains natural toxins or other natural toxic substances above the permitted quantities;
- c) the food that contains residue of pesticides, veterinarian medications, metals and metalloids and other substances that endanger human health above the permitted quantities;
- d) the food that contains food additives banned from the use in certain types of food, or if the quantity of food additives is above the permitted quantities;
- e) the food that contains radio nuclides above the permitted quantities or the food that has been subdued to radiation above the permitted level;
- f) the food that is packed in a package which contains microorganisms or other substances that may increase the content of the substances dangerous for human health;
- g) the food that originates from the dead animals or from the animals that were not processed in slaughterhouses for any reason.

Unsuitable food for human nourishment is:

- a) the food that has the sensor characteristics altered due to physical, chemical, microbiological or other processes, so much so that the food became unsuitable for human nourishment;
- b) the food that contains substances or raw materials that have not been previously toxicologically evaluated, tested and approved for human nourishment;
- c) the food that contains mechanical and other impurities that can be harmful to human health;
- d) the food packed in the package that is inappropriate or damaged so that allows microbiological or chemical alterations of the food above the permitted level;

According to the modern scientific research, the types of risk can be categorized by severity from the most severe ones that include unhealthy food, to the less severe types of risk that include inappropriate preparation of food or presence of additives. A part of the responsibility for the ability of food to cause cancer is in excess or in the lack of some substances that could release cancerous substances into an organism. Lesser risks are in the substances that are products of food processing or in substances that are results of passing the expiration date (nitrosamines, aflatoxin, benzopiren) which are evaluated to be potentially cancerous.

However, in comparison with unhealthy food, these substances are minor contributors to the development of lethal forms of cancer in the industrially developed countries. This also applies to the substances that enter food from the polluted environment such as heavy metals, lead, cadmium, copper and the like.

#### 4. CANCEROUS SUBSTANCES ON THE MARKET OF BOSNIA AND HERZEGOVINA

According to the Article 25 of the Law on food, the parties included in all the stages of food production, processing and distribution are obligated to make sure that the food meets the demands of the regulations. Those regulations regulate all types of participation in the food production process and order all the participants to supervise the implementation of the rules. All the parties included in all the stages of food production, processing and distribution and sale will be held liable for any damage to the human health due to the consummation of the food carrying health risks. However, it is not so in Bosnia and Herzegovina. The best example for that is the information from the Chamber of Commerce in BiH. The employees of the Chamber, as the publication of the Ministry of Foreign Affairs of BiH states, were receiving queries from the various countries all over the world about the possibility of sale of some products in BiH that could not be sold anywhere else in the world. The products included items of dubious origin, products whose origin should be altered on paper only and some other similar products. This is merely a testimony of the image that Bosnia and Herzegovina has in the world: as the country of unprotected borders, feeble and corrupt public institutions and public officials. This image has inspired many countries to turn their products that are in the gray economy zones into a viable export goods for the shipping into the countries of the same reputation as BiH has. The situation is similar regarding export from BiH, because there are few companies from BiH that could be present on the demanding markets without one or more agents. The latest example of the European waste that is distributed on the market of BiH is the import of milk with the presence of cancerous aflatoxin.

After the issue with milk, there was an issue with tuna from Spain, which was thick with histamine. Histamine is the substance that could cause poisoning and it is especially dangerous for the people with allergies, for children and pregnant women. As much as 27kg of that fish was sold on the market before the issue has been detected and the product withdrawn. Although the Law on food requires an international certificate that guarantees the lack of health risks and the quality of food in the process of import, the market of BiH still receives product of dubious quality. The main problem arises from the lack of information given to the public on cancerous substances in the environment.

The media are reporting on the crisis only after the controversial products have already appeared on the market. A crisis appeals to the media because it is a „good story” and is one of five most important events from the point of view of the media. „A good story” always sells newspapers but the validity and the relevance of the information published in the newspapers once the crisis is happening cannot be guaranteed. The media are always taking pessimistic stand in the time of crisis and that leads to filtering and twisting the information which, further confuse the public. Therefore, the public, or better yet the consumers as a public target group lose. There are many problems similar to these in BiH and they are the indicators of the powerful distortions in the state institutions.

Subsequently, it is obvious that there is despotism of institutions at work and should there exist despotism „forma regiminsi”, the state system could be brought in question. Perhaps democracy and despotism always go together. Despotic institutions manipulate the way of thinking and subsequently they manipulate the will of the individual and of the public. The institutions reflect the functioning of the state, which supports the idea that despotism and

democracy are not mutually exclusive. But what sort of democracy is a despotic democracy?!

A despotic democracy would be a democratic state in which the state institutions and the feeble legislative institutions act arbitrarily, confine the freedom of speech, manipulate public opinion and the like. It is particularly difficult to put in one sentence a democracy like that and the postulates of ethical communication. Bosnia and Herzegovina did make some progress regarding the state system (laws were passed, agencies were established, etc.), but the implementation of proper communication would remain an issue because of the link between politics and profit. There are many ethical issues regarding the implementation of communication because the communication is increasingly swayed to the protection of the profit and power and it declines from comprehension.

#### 5. CONCLUSIONS

The process of monitoring, measuring and analyzing the quality of the education system provides some significant information on compatibility of the system planned and the actual system. The complexity of the results of the higher education and their number are the key setting and the key factors to cause intensive bidirectional exchange of information and of data. The basic professional competencies of the scientific staff are pedagogical competency, program competency and the communication competency. The communication competency of the teachers was an object of a study (the ability to participate in a conversation, the ability to resolve conflicts (cancerous substances in food and water) and the ability to work in a team) and so was the formative influence of teaching profession to the development of the communication competence.

The media are often taking pessimistic stand in the time of crisis and that leads to filtering and twisting the information which, further confuse the public (the situation with the latest milk poisoning with aflatoxins). Therefore, the public, or better yet the consumers as a public target group (Dibb, 1995) Sally Dibb and associates, in their book „Marketing”, claim that the public target group is generally defined as a specific group of the individuals with a common interest in an organization, product or a social postulate) lose. There are many problems similar to these in BiH and they are the indicators of the powerful distortions in the state institutions.

**Conflict of interest: NONE DECLARED**

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