
INSTRUMENTS OF SUPPORT IN PROMOTION OF HEALTHY FOOD AND FOOD SAFETY CULTURE

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ABSTRACT

Food is imperative for biological survival. It is a necessity and a source of health and vitality if taken with the awareness of all the correlations between food and health and development. This paper aims to research the correlation between food, health, and longevity, and the factors in the chain of food safety and healthy food and diet to determine their role and significance and offer recommendations based on results and conclusions. Since children and adolescents are more likely to be affected by an unhealthy diet in the long term, their dietary habits were also researched. The paper identified the elements of importance for this problem – individuals, family, education system, media, food producers, state and international organizations. After analysis of the roles of all the elements and stakeholders in the chain of food safety and healthy diet, recommendations for each link in that chain were given.

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Introduction

Along with oxygen and water, food is a precondition of life, vitality, and proper development of all living organisms. Since the pre-historic times, even before civilization development reached the level when people started to cultivate the land and grow plants and animals for food, a hunter-gatherer society existed. In that sense, food always was an elementary human need that predates consciousness, a catalyst

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for communalization of people, as well as the impetus for further development and improvement of knowledge and techniques that helped to obtain food. Naturally, between the dawn of civilization to the contemporary age, there were so many changes that it is impossible to analyze them objectively and completely, but the essence remained the same – food is still a basic need and necessity. Like in many other segments, the domain of food also saw hyper saturation, so it looks like there is an abundance both in the sense of the amount of food and its diversity. Still, it applies only to certain parts of the world, meaning that there are regions and vast groups of people which do not have access to enough food even for meeting the elementary needs, and hunger and lack of drinking water poses one of the greatest problems of the modern society. The problem becomes even more crushing when we know that the human civilization developed so much that the research focus is pointed more to the Solar system and research of Mars than to solving existential problems on Earth, such as climate changes, pollution, and lack and improper distribution of food and drinking water. On the other side, in parts of the world where access to food and water is not a problem, there is a wide array of other issues and challenges that arise from the relationship to diet of, firstly, individuals, and then other factors. Ideally, along with an abundance of choice, proper decisions in regard to diet and food intake shall be implied, but in practice, the opposite often happens – out of that multitude, people decide on unhealthy choices for various reasons, which is particularly worrisome in children and adolescents. Such choices have different consequences, and these consequences have a price – from the individual, faced by those who endangered their health because of an unhealthy diet, to the collective, in the sense of expenses these consequences cause, whether it is for treatment of disorders caused by unhealthy diet, or foregone benefits due to impossibility of work because of health disorders caused by an unhealthy diet.

From that context, we arrive at the research problem of this paper. With complete respect and recognition of the problem of lack of food and water in general, the focus of this paper is pointed to parts of human society that enjoy the abundance of food, but for different reasons they make poor choices that consequentially bring harmful consequences both to individual and public health. The goals of this paper are to define the significance and elements of a healthy and unhealthy diet, to research causality between unhealthy food and increased risk of developing serious illnesses, to identify the dominant perception and habits of adolescents in regard to healthy and unhealthy dietary choices, as well as to research the true state and potential of useful activity of states and international organizations in control and labeling of safe food, and the role of mass media as the most powerful means of communication and consciousness-shaping in promotion of the culture of healthy diet and food safety culture. Additionally, one of the goals of this paper is to define specific recommendations for various stakeholders in this chain according to results and conclusions, and in the sense of the current and the desired state.

Methodology

In writing of this paper, the following methods were used: structural and functional analysis, in determining the effects of certain foods have on human health, to define healthy diet, to define carcinogenic contaminants, to define the other terms related to food safety and food security, to define the roles of international organizations for food safety control, and other stakeholders in the chain of food safety control; the descriptive method was used for describing the metabolic processes, the effects of certain foods on human health; the survey was used in collecting data about the perception of adolescents in regard of dietary choices, personal street-intercept survey, to be particular; deduction was used in defining the recommendations for the stakeholders; the normative method was used to describe current regulations and legislation in the domain of food safety.

Healthy food as the source of vitality

Food intake is a biological imperative for the growth, development, functioning, and survival of the human organism and represents a source of energy necessary for various biological and metabolic processes. Humans convert the chemical energy stored in the macronutrient constituents of food into energy. Dietary energy intake from food must balance energy expenditure due to metabolic functions and physical activity, plus extra energy costs such as growth during childhood (Roser et al., 2013). Within certain limits, humans can adapt to transient or enduring changes in energy intake through possible physiological and behavioural responses related to energy expenditure and/or changes in growth. Energy balance is maintained, and a new steady state is then achieved. However, adjustments to low or high energy intakes may sometimes entail biological and behavioural penalties, such as reduced growth velocity, loss of lean body mass, excessive accumulation of body fat, increased risk of disease, forced rest periods, and physical or social limitations in performing certain activities and tasks (Food and Agriculture Organization, 2004). In other words, the role of food is not only to satisfy hunger, but it allows the existence of the energy balance in the human organism, and by that, allows the functioning of the organism. Nonetheless, an adequate, healthy diet must satisfy human needs for energy and all essential nutrients. Furthermore, dietary energy needs and recommendations cannot be considered in isolation of other nutrients in the diet, as the lack of one will influence the others (Food and Agriculture Organization, 2004). This brings us to one of the theses of this paper that mass-consumed food and drinks that are considered unhealthy most often meet (and often surpass) the amount of energy necessary for metabolic processes and physical activity but do not meet far more complex needs related to adequate presence and amount of various nutrients that bring optimal biochemical and bioelectrical functioning of an organism.

Food safety in the narrow sense can be defined as the absence of risk in food, while in the broader sense, it can include nutritional characteristics and information about the unknown properties of food such as possible genetically modified food and the like (Bjelajac et al., 2017). This paper is focused on the broader sense of the previous definition since we primarily discuss food considered unhealthy without being

contaminated, meaning it is unhealthy due to the disbalance of energy and nutrients. Unsafe food in the sense of chemical, bacteriological or any other contamination is a separate problem, and it certainly helps the development of the most serious disorders and illnesses in human organisms. Therefore, in this paper, we will observe three categories of food: healthy food (uncontaminated food that contains adequate amounts of energy and nutrients), unhealthy food (uncontaminated food that contains inadequate amounts of energy and/or nutrients), and contaminated food (food exposed to chemical, biological, radioactive or physical contaminants).

Food is the most important source of vitality, and in certain geographical regions, like Japan or some Mediterranean islands, we can observe how the combination of a balanced diet and geographical attributes positively affects life expectancy, and despite not being the only one, it certainly is a very important factor in that. On the other side, parts of the world with insufficient food and water face not only shorter life expectancy but insufficient and improper development of children and adolescents, which is a direct consequence of undernourishment and shortage of food. On the third side, we have the most developed countries in the world, where poor choices in diet practically created an epidemic of obesity, which is also a public health problem, as obesity is often followed by other disorders and diseases, such as diabetes or increased risk of coronary diseases. In total, the problem of diet, meaning availability and choice of food, water, and beverages, is extraordinarily complex and shall be analyzed from specific angles with a proper focus, adapted to the concrete aspect of the problem.

Unhealthy food as one of the most significant risk factor for the development of malignant and other serious diseases

Food is a source of vitality, but it can be a factor causing the development of the most serious diseases. It has been estimated that 30-40 percent of all cancers can be prevented by lifestyle and dietary measures alone. Obesity, nutrient sparse foods such as concentrated sugars and refined flour products that contribute to impaired glucose metabolism (which leads to diabetes), low fiber intake, consumption of red meat, and imbalance of omega 3 and omega 6 fats all contribute to excess cancer risk (Donaldson, 2004). Protective elements in a cancer-preventive diet include selenium, folic acid, vitamin B12, vitamin D, chlorophyll and antioxidants such as carotenoids (alpha-carotene, beta-carotene, lycopene, lutein, cryptoxanthin) (Divisi et al., 2006). According to Donaldson (2004), a cancer-preventative diet would have: adequate, but not excessive calories, 10 or more servings of vegetables a day, including cruciferous and allium vegetables; vegetable juice could meet part of this goal, 4 or more servings of fruits a day, high in fiber, no refined sugar, no refined flour, low in total fat, but containing necessary essential fatty acids, no red meat, a balanced ratio of omega 3 and omega 6 fats and would include DHA, flax seed as a source of phytoestrogens, supplemented with ~200 µg/day selenium, supplemented with 1,000 µg/day methylcobalamin (B-12), very rich in folic acid (from dark green vegetables), adequate sunshine to get vitamin D, or use 1,000 IU/day supplement, very rich in antioxidants and phytochemicals from

fruits and vegetables, including α -carotene, β -carotene, β -cryptoxanthin, vitamin C (from foods), vitamin E (from foods), very rich in chlorophyll, supplemented with beneficial probiotics, and supplemented with oral enzymes. Such a diet would likely bring at least a 60–70 percent decrease in breast, colorectal, and prostate cancers, and even a 40–50 percent decrease in lung cancer, along with similar reductions in cancers at other sites (Donaldson, 2004). Said recommendations would bring a positive effect on risk decrease and prevention from other diseases, like coronary diseases and diabetes, and help better general health. There are many other disorders and diseases caused by an unhealthy diet, such as obesity, diabetes, cardiovascular diseases, and others. A healthy population is a basis and the most important resource of a healthy society, and the current pandemic of COVID-19 shown that good general health was the reason for survival in certain cases since nearly all the health disorders and diseases mentioned in this paper represented a strongly increased risk factor from serious development of COVID-19 – from obesity to cancer.

Food that is generally healthy can be carcinogenic if it contains carcinogenic contaminants in the amount that surpasses the recommended ones. Numerous food contaminant concerns exist, and several food contaminants have been confirmed as carcinogenic to humans. Possibly the clearest example is the finding that aflatoxin is a major cause of liver cancer, especially in lower resource countries and in populations where infection with hepatitis B is common (Abnet, 2007). In addition to aflatoxin, which was brought to the focus of the public in our country due to its content in milk, which far surpassed the allowed amount, the other contaminants that are proven to be carcinogenic in humans are alcoholic beverages and dioxin (2,3,7,8-tetracholordibenzo-*p*-dioxin) (Abnet, 2007). The National Toxicology Program of the US Department of Health and Human Services publishes the Report on Carcinogens. The current edition lists more than 50 substances as known to be human carcinogens, many of which are a product of environmental, industrial, or radioactive pollution (see more: National Toxicology Program, 2016). Although the debate is ongoing about the carcinogenicity of depleted uranium that contaminated soil and water by the usage of ammunition that contained this substance during the NATO bombing campaign of the Federal Republic of Yugoslavia in 1999, it is undisputed that one of the military targets of the NATO were oil refineries and storages. The environmental catastrophe was caused by fire of oil tanks in Pancevo, Novi Sad, and Čukarica in Belgrade. Oil burning releases various cyclic compounds, which are also very harmful, and under the influence of sunlight and other factors, dioxins are released, too (Bjelajac et al., 2013). Dioxin is extremely stable, both to environmental and biological breakdown, leading to its persistence in the environment and its bioaccumulation in the food chain. Because of its high lipophilicity and water insolubility, dioxin concentrates in sediments and is incorporated into the fatty tissue of fish, birds, reptiles, and mammals. Much of its presence in plants is due to atmospheric transport on particles, resulting in settling on the leafy tissues of plants (Birnbaum, 1994). Therefore, food is a very important factor both in the prevention and in the risk-increase of development of malignant and other

serious diseases by their properties, and their presence in a diet is most often a choice of individuals. Nonetheless, with food contaminated with carcinogenic contaminants through the soil, water, and air, transparency, consciousness, and communication about the existing contamination or ecological risk are key preventative factors.

Perception of adolescents regarding healthy and unhealthy food

Adolescents have a distorted perception of the significance of a healthy diet. Food safety is one of the most important elements of security culture, and ignorance of principles of security culture in the domain of food safety is particularly harmful precisely in that age when the process of mental and physical development is still ongoing. We shall stress that with adolescents, the creation of habits and perception lays of four foundations – family, school, peers, and media. All four factors are very influential, and they amplify or soften the effect other factors helped created, whether it is a positive or a negative effect. The authors of this paper conducted research with the goal of determining the perception of dietary choices in adolescents. The research⁴ was conducted with students of eight elementary schools and high schools in Belgrade and Novi Sad in period from September 1st, 2019 to December 20th, 2019. The research was conducted by the authors with associates. The type and size of the sample was a random, representative sample of 814 students of higher grades of elementary schools and high schools, which simultaneously represent the sample frame. Sample selection was made by street-intercept random sampling in the vicinity of said elementary and high schools. The selection of the respondents was made by random sampling on the day of the survey. The research technique was a personal, face-to-face technique, while the research instrument was the questionnaire. Based on the methodology established during the conducting of this research, the following categories of respondents were enveloped: gender structure – 52% females and 48% males; age structure – 47% aged 11-15 and 53% aged 16-19. In regard to education/profession, the sample consisted of: 11% - 5th graders, 10% - 6th graders, 14% - 7th graders, 12% - 8th graders, 13% - high school 1st graders, 14% - high school 2nd graders, 15% - high school 3rd graders, and 11% - high school 4th graders. The questionnaire included questions regarding the number and type of daily meals, the consummation of certain ingredients and food, consummation of carbonated and non-carbonated juices and soft drinks, consummation of energy drinks, as well as to certain aspects of daily activities relevant to the creation and release of certain nutrients necessary for the balanced diet, such as habits in spending their free time and extracurricular activities.

4 This research was conducted for inclusion in the second, amended edition of the monography “Security Culture – The Art of Living” by author Željko Bjelajac, which will be published at some time after this paper is published. Only a portion of the data gathered by the research is presented in this paper, and it is previously unpublished.

Table 1. Frequency of intake of certain food and beverages on a weekly basis in students of elementary and high schools in Serbia

Food/Beverage	Never	%	1-2 times	%	3-4 times	%	Every day	%
Pastries	49	6%	163	20%	488	60%	114	14%
Fast food (barbecue, sandwich, pizza)	98	12%	358	44%	293	36%	65	8%
Juices and soft drinks (carbonated and non-carbonated)	90	11%	122	15%	228	28%	374	46%
Energy drinks	423	52%	204	25%	163	20%	24	3%
Sweets	41	5%	114	14%	179	22%	480	59%
Vegetables	24	3%	57	7%	212	26%	521	64%
Fruits	16	2%	41	5%	155	19%	602	74%
Milk	16	2%	49	6%	163	20%	586	72%
Dairy products	16	2%	57	7%	171	21%	570	70%

Source: Authors' research

Results shown in Table 1 include both foods brought from home and food purchased during school time, as that fact was irrelevant for frequency analysis of weekly intake of certain food and beverages. What is concerning is that around 2% of school-age children do not consume milk or dairy products on a weekly basis and that sweets are consumed daily by nearly 60% of the children. Results of this research are comparable to results of other studies of dietary habits of children conducted on the territory of the Republic of Serbia recently (see more: Institute for Public Health of Serbia, 2014; Švonja-Parezanović, Perić-Prkosovački, 2014).

The necessity of the proactive role of international organizations for food safety control

The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations that leads international efforts to defeat hunger. Their declared goal is to achieve food security for all and make sure that people have regular access to high-quality food to lead active and healthy lives. FAO works in 130 countries worldwide and has 194 member states. It was founded in 1945 and is headquartered in Rome, Italy (see more: Food and Agriculture Organization, 2020). Together with the WHO, they created the Codex Alimentarius, or "Food Code," which is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. The Commission, also known as CAC, is the central part of the Joint FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade. The Commission held its first meeting in 1963 and adopted numerous standards, principles, and guidelines, among which the most important ones are General Principles on Food Hygiene from 1969, General Standard for the Labelling of Prepackaged Foods from 1985, General Standard for Contaminants and Toxins in

Food and Feed on 1995, General Standard for Food Additives from 1995, etc. Some of the main areas of their concern are animal feed, contaminants, antimicrobial resistance, nutrition and labeling, biotechnology, and pesticides. But, as with many other international organizations, their standards and related texts are voluntary and have to be translated into national legislation or regulations to be mandatory and enforceable. Still, these standards are applied in the international food trade, and are in the international food trade between its 188 member countries (see more: Food and Agriculture Organization, World Health Organization, 2020).

The World Food Programme (WFP) is the leading humanitarian organization delivering food assistance in emergencies and working with communities to improve nutrition and build resilience. For its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas, and for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict, WFP was awarded the Nobel Peace Prize in 2020. In 2019, WFP assisted 97 million people – the largest number since 2012 – in 88 countries. On any given day, WFP has 5,600 trucks, 30 ships, and nearly 100 planes on the move, delivering food and other assistance to those in most need (World Food Programme, 2020). The WFP was first established in 1961 after the 1960 Food and Agricultural Organization (FAO) Conference. WFP formally started its work in 1963 with a mandate from the FAO and the United Nations General Assembly on a three-year experimental basis. In 1965, the programme was extended to a continuing basis (Zalite, 2013). As humanitarian food assistance and emergency relief organization, their focus is more on food security than food safety, but they nonetheless have an important role in increasing the level of food safety in countries they provide relief.

The World Health Organization (WHO) is a specialized agency of the United Nations, financially subordinate to the United Nations Economic and Social Council. It has around 7,000 employees in 150 countries and regions and an annual budget of around \$4.2 billion. As an umbrella organization for care about global health and making recommendations and decisions about procedures in health crises (Bjelajac, Filipović, 2020a). Although it is not its main task, the WHO is involved in the betterment of food safety standards and control through the prism of public health. As we've mentioned, they work jointly with the FAO on Codex Alimentarius, and they are partnering with numerous international and local organizations through their Department of Food Safety and Zoonoses (FOS). The WHO has declared food safety as a public health priority, and through FOS, helps its member states to develop food safety policies and implement risk-based foodborne disease surveillance, prevention, and control programs (see more: WHO, 2020).

The European Food Safety Authority (EFSA) is the agency of the European Union, established in 2002, with headquarters in Parma, Italy. EFSA provides independent scientific advice on food-related risks and issues advice on existing and emerging food risks. This advice informs European laws, rules, and policymaking – and so helps protect consumers from risks in the food chain. Its remit covers: food and feed safety, nutrition, animal health and welfare, plant protection, plant health. EFSA's

work involves: gathering scientific data and expertise, providing independent, up-to-date scientific advice on food safety issues, communicating its scientific work to the public, cooperating with EU countries, international bodies, and other stakeholders, boosting trust in the EU's food safety system by providing dependable advice (see more: European Union, 2020). Its work overlaps in some sections with the FAO and the CAC, but it also adds an additional layer of protection and communication to the European consumers, allowing their choices to be better-informed and informing them of the risks.

In Serbia, with the adoption of the Law on Amendments to the Law on Food Safety, our legislation is fully harmonized with the international standards in regard to food safety. In Article 14, paragraph 1 of the Law, it is written that "International obligations in the field of food safety are performed in accordance to standards, guidelines, guides, and recommendations of the relevant international organization, including the Codex Alimentarius Commission, Agreement on sanitary and phytosanitary measures of the WTO (SPS Agreement), international conventions and other applicable international agreements, and the information is exchanged with other national organizations responsible for food safety" (The Official Gazette of the Republic of Serbia, 2009). Article 25, which regulates prohibition of trading of unsafe food, prescribes that the food is unsafe if it contains: plant protection products, biocides or contaminants, or their metabolites and decomposition products above maximum allowed concentrations; plant protection products, meaning biocides whose use is not approved or allowed, substances with pharmacological effect or their metabolites that must not be given to animals used for food production, or they surpass maximum allowed amounts of residue or are not approved or registered for application on animals used for food production, or are not allowed as additives in feed for animals used for food production; substances with pharmacological effect or their metabolites in animals that were treated, without compliance to prescribed withholding period; microorganisms, viruses, parasites and their developmental forms that pose a danger to health of people: substances (physical, chemical, radioactive) that in itself or together with other substances surpass maximum allowed values and pose a danger to human health (The Official Gazette of the Republic of Serbia, 2019). The development of agriculture and the provision of health-safe food are common concerns of the international community (Jurjević et al., 2019). The process of legislative harmonization within to process of the accession to the European Union shows positive aspects in the domain of food safety, and the hope remains that the institutions of our country will regulate aspects of certain food and beverages that do not classify them as unsafe, but make them unhealthy, such as the amount of sugar per unit of mass or volume. Still, there is an impression that both on the national and international level, much more can be done – like strict control and implementation of standards "from farm to table" on the national level, while on the international level by creating mechanisms and instruments that would not be just on voluntary and non-binding recommendations level, but much more strict approach, where adoption and application of recommendation and standards would be binding

for member-states of international organizations that prescribed them, together with the right to direct control of the application of these standards in the member-states. The field where the standards and regulations of food safety are most often met is the food trade, particularly international, as the specificity of trade in the agro-industry stems from the importance of these products for the health and life of the population (Prdić, Kuzman, 2019). Therefore, the same level of following protocols and meeting standards has to be secured in the food trade at every level.

The crucial role of mass media in the development of collective consciousness in the domain of healthy food

Mass media play a key role in the process of information dissemination, as well as in the process of creation of the collective consciousness, and one of the key techniques in these processes is propaganda. From a modern perspective, propaganda seems inseparable from media of mass communication, which have the ultimate potential for dissemination of information, as well as for engineering of consciousness and public opinion manipulation because of their efficacy, availability, and constant presence (Filipović, Spaić, 2020). When discussing propaganda, it is generally perceived as a negative phenomenon, mostly because of manipulation, which is its consisting part, and in itself has a negative connotation. But *per se*, propaganda is neither a good nor a bad thing, and it can be used both for good and bad. In the context of this paper, we discuss the influence and potential of mass media in the creation of positive collective consciousness about the importance of healthy and safe food, and propaganda is one of the communications techniques that mass media regularly use, and every program/content the media broadcast or distribute contain elements of propaganda. Here we think mostly about economic propaganda, meaning advertising, which is the main source of income of mass media. On one side there are companies that try to improve sales of their products or services in every possible way, and their readiness to pay large sums of money for advertising in media of mass communication, and on the other side there are media, for which the advertising money is also crucial, so any other interest and motive disappears in such constellation. Naturally, there are laws and regulations that separately regulate both the domain of media and the domain of advertising, so there are large improvements when compared to earlier periods. Before, tobacco manufacturers and ad agencies were unscrupulous in finding ways to improve the sales by advertisements, so the ads for cigarettes often included the depiction of children who smoke. By strict regulation of tobacco products, not only their advertisement was forbidden, but brand names and packaging of tobacco products were changed, with a clear warning of their harmfulness, which in certain countries include graphic depictions of diseases smoking can cause (Bjelajac, Filipović, 2020b). Naturally, the media will always advertise any product whose advertising is not prohibited, so it shall not be expected that the media will behave differently than the individuals whose consciousness they affect in the process of forming the collective consciousness about the importance of healthy food and balanced diet – both will choose the simplest and fastest solutions at their disposal,

whether it is about diet or program creation. Therefore, cohesion and joint activity of international organizations, countries, and their media partners are necessary to reach the potential of mass media in this domain. Such a far-reaching joint project should be permanent, and its results would be measurable only after a certain passage of time.

In the meantime, the media should not disregard performing their own functions. As mass media, in principle, have their roots in journalism, the performing of informative function is the reason for their existence, and it is exactly what individuals and society expect from them. Through mass media, the public regularly receives its daily amount of reliable information, which in the end help the individuals to realize their position in the society, and wider, in the global community (Bjelajac, Filipović, 2018). In that sense, education function is a certain superstructure, but media can achieve the education function in a satisfactory manner if they perform their informative function in a desirable way. Simply, if the citizens can obtain enough clear information through the media so they can make an informed choice on every topic, then we can say that the media performed its primary function. The influence of media on the affirmation of food safety can be divided into two categories: influence through basic media content (articles, shows, reports, audio, and video clips, etc.) and influence through advertising content (Bjelajac, Filipović, 2020b). If media broadcasts content that promotes the culture of a healthy diet in one hour of their program, the positive effect created by such program can be negated if in one of the next hours of the program there is product placement of, i.e., an energy drink which contains vast amounts of sugar. In that, and in similar examples, confusion appears in consumers of media content, which can lead to faulty conclusions, but what practically is inevitable in such cases is that previously achieved positive educational effect is annulled. Therefore, the media must take a more proactive role, in accordance with their role in the society and functions they must perform so they would have a legitimate right to occupy and use the media space, which has to be perceived as public property.

Results and Discussion

The value of human life is above any other interest. The quality of human life most directly depends on human health, and food has an extremely important effect on health, as well as on the process of growth and development of children and adolescents. We have stressed that the topic of safe food shall be looked at as two separate topics – food safety and food security. With that in mind, we can see a dramatic difference between poor and rich parts of the world – in poor countries, food security is a much bigger problem because if there is not enough food, its nutritional value is not the most important, but nevertheless, it has to be safe for consumption. On the other side, the question of food safety in the broader sense of its definition is one of the largest problems of the richer part of the world. We have stated the correlation between the diet and the increased risk of developing serious disorders and diseases, which are a burden for the affected individual, their family, but also the economy, society, and state. The good general health of individuals is a precondition for sustainability and development

of healthy states and societies, even if we disregard the financial burden created by the diseases caused or worsened by unhealthy dietary choices.

One of the limitations both in the research of this phenomenon and the application of the conclusion lies in the fact that even healthy food, or even organic food, can become unhealthy during storage or preparation, particularly during heat treating. Therefore, the role of every individual is extremely important, and in order for individuals to perform their role in an adequate manner, they must be conscious and well-informed. It is one of the reasons for insisting on increasing the level of security culture, whose very important part is food safety culture. Food operators must ensure food safety at all stages of handling food, substances, raw materials, semi-finished products. The direct responsibility of the operator for the safety of food is emphasized – the operator must be able to demonstrate the awareness of potential risks (Burešova et al., 2020). Existence and presence of food safety culture at every level consequentially guarantee the presence of consciousness and knowledge of each parameter related to a healthy diet, which significantly increases the probability of respecting those parameters, and provides the problem solving from its starting, most basic level, which is the individual and their family.

We have concluded that the creation of perception and habits in children and adolescents is based on four foundations – family, school, peers, and media. Unfortunately, one of the negative aspects of the contemporary society is that, in a way, agriculture disappeared from culture, in the sense that the majority of children living in cities develop without consciousness of the basic natural causality, from seed to fruit, and everything that is necessary before, during and after that process in order for it to be successful. Oversimplified, fruits do not grow in supermarkets, despite often being the only place where children can see fruits and vegetables, not to mention seeing living farm animals they can hardly see in cities. That complex correlation between an individual, culture, nature, and knowledge and awareness of natural processes is worthy of further wide multidisciplinary studies.

Simultaneously with the food chain, we can say there is a chain of responsibility for a healthy diet and food safety in general. Its links are individuals, family, education system, media, food producers (distributors and retailers have their responsibility in this chain, but since it's significantly lesser compared to other links, we will not explore them in more detail here), state and state institutions, and international organizations. The dysfunction exists in every link of the chain, and it is one of the obstacles and challenges that must be overcome, so the process of solving the problem of unhealthy dietary habits can begin. In that sense, and in accordance with the results and conclusions we arrived at in this paper, we can define certain recommendations for every link of this chain:

- Individuals shall raise the level of their awareness and knowledge of aspects of a healthy diet, of benefits and consequences of the long-term intake of a certain food, and be a positive influence on other individuals in their social circle;
- The family shall take care of a healthy and balanced diet at home as one of the most important factors both for health and proper development of children and adolescents;

- Education system shall introduce studying of security culture as a separate class in their syllabuses since food safety, and a healthy diet are basic elements of security culture;
- Media shall raise the level of their programming responsibility to a healthy diet and food safety culture as an extremely important factor of human health, to promote healthy food as much as possible in their content, both basic and advertising, and to not promote unhealthy food and beverages before 22h, meaning during the time when it is probable that the children are watching their program;
- Food manufacturers shall follow the standards of food safety or reduce the amount of potentially harmful nutrients in their products as much as possible, such as various sugars;
- State and its institutions shall secure the application of food safety standards with mechanisms at its disposal, such as inspections and frequent analysis of food already on the market, in order to provide sustainability of following the standards. Similar to the existing mandatory distance of certain establishments from schools, fast food objects shall be removed from schools at least 150 meters. Additionally, it would be greatly beneficial to introduce the system of color-coding of food and beverages in accordance with the nutritional contents of the product. In such a way, food and beverages that are unhealthy due to the disbalance of nutrients and energy shall be marked with a red rectangle on the label on the packaging, while food and beverages that are healthy would be marked with a green rectangle. In cases of unhealthy food, a warning about the potential harmfulness of the products and the reasons for harmfulness shall be written inside the red rectangle, in addition to the list of ingredients, energy, and nutritional values of the product, which shall be written inside the rectangles in both instances;
- International organizations shall, as a first step towards adopting mandatory recommendations, prescribe sanctions for countries that do not follow the standards of these organizations, to which they are obligated by their membership status, as well as to perform unannounced control of the manufacturers and distributors of food in regard of following standards. Sanctions for not following standards and regulations could range from suspension or exclusion from membership to recommendations to other international organizations to penalize the countries breaching the standards, for example, to the World Trade Organization, among others.

Conclusions

There is a large disbalance between the normative and the real in domains of food safety, healthy food, and healthy diet. While these domains are well-regulated, the reality of the situation is that many of these regulations and standards are on paper only. Food safety, in the narrow sense of the definition, is generally good and in accordance with international standards, but in the broader sense, which is of capital importance in domains of healthy food and healthy diet, it is often subjugated to other interests, mostly financial in nature. In a situation where environmental pollution and climate changes can create unseen and unpredictable consequences, it is ever more important to develop and maintain awareness

and knowledge of the correlation between food and health and to act accordingly, and that is the only sustainable way to achieve health through diet and food safety.

Conflict of interests

The authors declare no conflict of interest.

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