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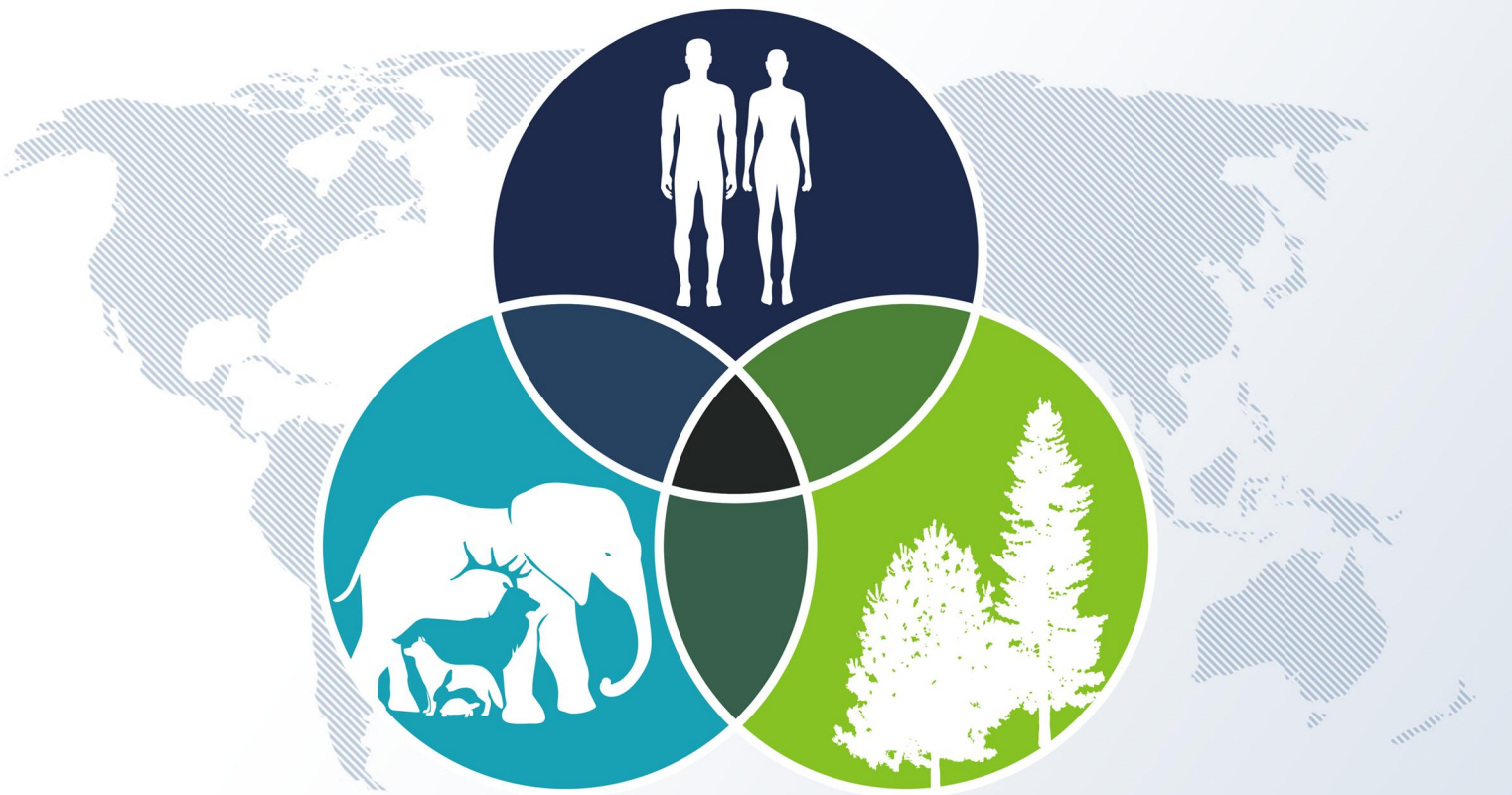

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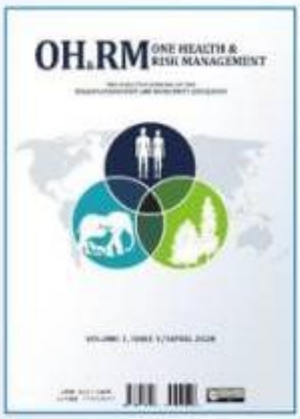

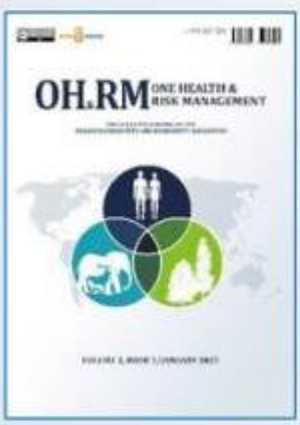

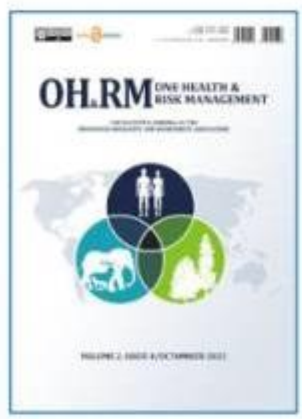

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Materials of the National Scientific Conference with international participation
"ONE HEALTH" approach in a changing world

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ONE HEALTH APPROACH IN A CHANGING WORLD

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One Health is a multidimensional concept that encourages the community from interdependent fields (such as human medicine, veterinary medicine, environmental health, ecology, public health and health economics) to work together, since when it comes to global health, everything is interconnected. Therefore, to overcome the nowadays health challenges, many factors require to be addressed together.

According to the World Health Organization, about 75% of the emerging human diseases have originated from animals; humans and animals are interconnected with the environment and constantly evolving. Environmental health affects human and animal health through contamination, pollution and climate change.

Despite the substantial progress made so far, One Health's approaches are indispensable, implying a better implementation of the programs, policies, legislation, and research in which all work together to achieve better public health outcomes.

In a world where people can easily cross the national borders, likewise, diseases can too. One Health comprises communication, coordination, and collaboration and is not just a problem for scientists. The challenging time we go through, requires effective involvement of all of us in finding solutions and prevent future pandemics, such as: health professionals, the media, educators, governmental and non-governmental organizations and even the general public. In order to ensure the safety environment for people around the world and protection from the possible harmful diseases, countries need to work together to implement One Health practices - an effective measure in protecting public health, as well as improving health and security.

The emergence of the first international conference in Republic of Moldova through the approach of the One Health principles, underlines the importance of this issue for our country, as well as the need to exchange new knowledge gained from different disciplines and their interconnection at the local level.

I hope that all the speakers of this conference would share ideas and find ways to strengthen the One Health approach in order to prevent communicable and non-communicable diseases in our Changing World.

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FOOD BEHAVIOR, SOCIAL ASPECTS AND NUTRITIONAL STATUS IN ROMANIA

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Keywords: *health, motivation, BMI, food behaviour, education.*

Introduction. Health status is directly linked with nutritional status, life style and food behaviour. There are 4 Health Indicators: Health Conscience, Health Information Orientation, Health-Oriented Beliefs, and Healthy Activities. People who are health conscious have a positive attitude towards preventive measures such as healthy eating. Health information refers to the extent to which an individual is willing to seek health information. At the cognitive level, health orientation is manifested in the field of health beliefs, which refers to the specific cognitions held by individuals about health behaviors. Also, health-oriented individuals are more likely to engage in healthy activities than other people in the population. The four aspects of the health orientation mentioned suggest the differences between individuals in the context of their sources of information in the health field. Our aim was to evaluate connections between social characteristics, nutritional status data and food behaviour, in a Romanian population sample.

Material and methods. We followed a qualitative cross-sectional study based on screening of 751 Romanian adults from different regions of our country, which was carried out in 2018. We used a validated questionnaire from an international project, based on 26 specific questions, filled in online, regarding their nutritional and social data completed by their attitudes and information towards food behaviour. In our group, 68.7% were women, one quarter had over 50 years old, 82.3% were from urban areas and almost 2/3rds were higly educated.

Results. We obtained a positive correlation between demographic parameters and the BMI, also healthy food behaviors were more frequent at women versus man. On the opposite, the confidence of men upon the information about healthy eating from the internet was higher than that of women. The number of hours/day spent watching TV or in front of the computer was positively correlated with age and also with their BMI. A high education level was significantly positively associated with healthier choices regarding nutrition practices. Health status in relation with nutritional status showed us that the most concerned group for their diet was those who suffered from different pathologies especially cardiovascular disorders. We obtained no significant associations among BMI, environment, current professional activity, responsibility for eating, and physical activity.

Conclusions. Nutritionists, specialists in medicine, and food stakeholders should promote healthy diets through adequate sources of information aimed at target groups. Multidisciplinary teams should develop a more efficient strategy to motivate people to make healthy eating choices and improve population food behavior.

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SAFETY OF THE HOSPITAL ENVIRONMENT

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Keywords: *risk, healthcare-associated infections, patients, medical personnel.*

Introduction. Prophylaxis and control of infections is a priority issue of the global health system. According to the World Health Organization, the role of infection prevention in the field of hospital safety and the quality of the medical record is important, both for medical workers and patients.

"Modern scientific research in the field of infection prevention and control shows that none of the medical institutions in any country can claim to be outside the risk of infections associated with the provision of medical care" (WHO).

According to data from the European Center for Disease Prevention and Control, more than 4.1 million people in the European Union annually have an infection associated with healthcare, and about 37 thousand die as a result of this infection.

Material and methods. The analysis was performed based on the information and statistical data provided by the annual reports of the National Agency for Public Health of the Republic of Moldova, during the years 1993-2017. The study is retrospective.

Results. The safety of the hospital environment is in a causal interrelation with the healthcare-associated infections which represents a medical, social and economic problem, determined by the increased frequency of these infections even in well-equipped hospitals.

Thus, a safe hospital environment – is a cumulative term that includes both protection from infections, as well as conditions of compliance with the rules of personal hygiene, curative-protective regime, psychological protection of patients and medical personnel.

Official statistics in the Republic of Moldova do not reflect the actual morbidity through infections associated with healthcare and consequently, underestimate their importance.

The dynamics of morbidity through these infections in the Republic of Moldova (1993-2017) is uneven, with an increase in incidence in recent years. In 2017, 1156 cases of infections were reported in the country (in 2016 – 1114 cases), which is about 2.0 cases per 1000 hospitalized patients.

The structure of infections associated with healthcare in recent years has not undergone essential changes regarding the placement of nosological forms, placing first the infections in the cases with 9.9 (2016 – 9.6) cases per 1000 births, followed by neonatal infections – 2.9 cases per 1000 surgeries (2016 – 2.2), surgical wound infections – 1.5 cases per 1000 surgeries (2016 – 1.5), followed by consecutive infections of therapeutic injections, ventilator-associated pneumonia, infections during the perinatal period and urinary tract infections.

Conclusions. In order to combat and prevent healthcare-associated infections, the actual prevalence of which is not known, a program of infection surveillance and training of medical personnel must be implemented, which will contribute to the increase of the safety of the hospital environment, for both patients and medical personnel.

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ATMOSPHERIC AIR POLLUTION AND HEALTH STATUS OF THE POPULATION OF THE CHISINAU - CITY

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Keywords: *atmospheric air, pollution, health of the population.*

Introduction. According to the WHO the burden of diseases, conditioned by air pollution, is the cause of more than two million cases of premature death annually.

Material and methods. There were analyzed the data of the State Hydrometeorological Service, the results of laboratory analyze of NAPH regarding the atmospheric air pollution and were estimated morbidity of the population of Chisinau-city.

Results. Data on air quality in the Chisinau-city over the years reveals that the maximum value of the average annual concentration of solid suspensions (fibrous pollutants) was recorded in 2007 and amounted to 0.11 mg/m^3, i.e. 0.73 MPC (maximum permissible concentration), this being – 0.15 mg/m^3. In the last 8 years (a. 2008-2015) the value of the average annual concentration of solid suspensions remains at the level of 0.1 mg/m^3 and does not exceed the MPC. Focusing on the level of air pollution with SO2 (MPC – 0.05 mg/m^3) in the Chisinau-city, we can mention that during the years 2005-2008 the content of this substance was maintained at the level of 0.01 mg/m^3, and during the years 2014-2015, the level of SO_2 concentration in the Chisinau-city remains at 0.005 mg/m^3. The NO_2 concentration was evaluated using the MPC in the Republic of Moldova equal to 0.04 mg/m^3. The average annual NO2 concentrations had an extremely alarming value in 2009 – 0.09 mg/m^3, which was about 2.3 MPC, followed by a content of 0.06 mg/m^3 in 2014-2015. Formic aldehyde exceeded the MPC (0.003 mg/m^3), being from 0.004 in 2005 to 0.018 mg/m^3 (6 MPC) in 2012 and 0.011 mg/m^3 in 2015. According to the data of NAPH in 2020 the concentration of dust in 26.5% of cases exceeded the MPC (in 2019 – 30.7%, 2018 – 55.4%), sulfur dioxide – 17.6% (in 2019 – 7.8%, 2018 – 17.7%). Non-compliant samples regarding the content of formic aldehyde were in the year 2020 – 0.47% (in 2019 - 9.2%, 2018 – 2.12%) and of nitrogen dioxide – 7.12% (in 2019 – 11.5%, 2018 – 19.7%). Depending on the inhabited area, the study quantified a high level of morbidity due to respiratory and circulatory diseases at the population exposed to pollution in polluted area (PA), compared to the non-exposed population from conventionally clean area. In the structure of respiratory diseases, tonsillitis, rhinitis, pharyngitis, laryngitis, sinusitis, acute tracheitis predominated. This indicator was higher in the population from PA, being equal to 605.0 compared to 496.7 cases per 1000 inhabitants. Pneumonia in the population from PA was 3.4 times more often and acute bronchitis – 1.8 times. Lung cancer was 1.3 times ($p<0.05$) more common in PA.

Conclusions. It was quantified the existence of the dependence of the health status of the urban population on the atmospheric air quality and also the need for the elaboration and implementation of prophylactic measures.

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CLIMATE CHANGE: PERSPECTIVES ON MEDICAL EDUCATION IN THE REPUBLIC OF MOLDOVA

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Keywords: *climate change, health, medical curriculum.*

Introduction. Climate change threatens not only the nature and agriculture but also the human health. Education is the key element of the global response to climate change. There is an increasing emphasis on the inclusion of climate change issues in medical education. A medical education curriculum on climate change has the greatest potential to reach large cohorts of professionals and allow for standardization between institutions. In June 2020, New Jersey became the first state in the world which included climate change education in its Student Training Standards. To date, only a few medical schools have changed programs to focus on climate change: the University of Minnesota included climate topics into the training programs for physicians, nurses, and pharmacists; similar changes have been implemented at the Mayo Clinic; at the University of Illinois, first-year students are being trained to predict the asthma flare-ups due to more frequent fires at Microbiology discipline, as well as Lyme disease and other vector-borne microbial diseases.

The aim of the current research is to identify directions for developing the medical education curriculum that will help future doctors and physicians to understand the interrelationship between public health and climate change.

Material and methods. The main challenges regarding climate change impact, which might interfere with the medical training, can be as follows: new subjects are difficult to incurporate into existing courses, and teachers do not have sufficient knowledge of the subject.

The *curriculum for medical students* provides an optional course training lasting for 50 hours, of which 30 hours will be completed through direct contact and 20 hours by individual work, and includes 11 issue-related introductory topics. A 36-hour *curriculum* has been initiated for *resident-doctors*, focusing on the study of the healthy population impacted by climate changes in order to provide appropriate preventive, as well as develop a proper behaviour in case of extreme situations. The *curriculum* developed *for physicians* is aimed at strengthening the knowledge of health professionals about the causes, consequences, health impact, ways to reduce and adapt to climate change; it will enable public health institutions to prepare human resources to manage climate change situations that will respond by implementing specific preventive and control measures. The curriculum is designed for 90 hours, divided into 14 topics.

Results. In the health training process the problems influenced by climate change can be: new subjects are difficult to include in existing courses, teachers do not have enough knowledge about the subject.

The curriculum for students provides an optional course training with a duration of 50 hours of which 30 hours will be completed through direct contact and 20 hours for individual work and includes 11 introductory topics in the problem. A 36-hour *curriculum* is initiated for *resident-doctors* with an emphasis on studying the impact on the healthy population in order to organize prophylactic measures of the consequences of climate change but also the correct conduct in extreme situations. The *curriculum* developed *for physicians* is aimed at strengthening the knowledge of health professionals about the causes, consequences, health impact, ways to reduce and adapt to climate change; will allow public health institutions to have human resources trained in the management of situations influenced by climate change, which will respond by implementing prevention and control measures in the field. This curriculum provides a duration of 90 hours divided into 14 topics.

Conclusions. The implementation of training on climate change is an indisputable topic, so, the curriculum development might be the first step in initiating the instructional process.

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GLOBAL HEALTH EDUCATION PROGRAM: EXPERIENCE OF A MULTIDISCIPLINARY CURRICULUM AT THE SCHOOL OF MEDICINE IN ROUEN, FRANCE

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Keywords: *global health, One Health, education, public health.*

Introduction. The One Health (OH) approach is based on the notion that human, animal, and environmental health are intimately connected and mutually dependent. Consequently, advocates of this movement describe the need for transdisciplinary approach when tackling complex global health (GH) issues with high societal values.

The interest in GH as an academic discipline has increased in the last decade. Global health, including OH, are increasingly taught in health training institutions.

The Rouen School of Medicine is one of the first to offer a GH curriculum in France.
The objective was to identify the characteristics and profile of students involved in GH curriculum.

Material and methods. In 2019 and 2019, a cross-sectional study was conducted, including enrolled in the GH course: 3rd and 4th year in medicine, midwifes studies and pharmacy.

Based on self-questionnaire, data collected were gender, age, motivations for health studies, investment in humanitarian actions and associations, opinions about the themes proposed for HG/OH teaching content and their future professional career.

Results. A total of 422 students were included. In the group attended to GH cursus (GH+) and the control group (GH-), the sex ratio M: F was respectively 0.4 and 0.7, p=0.02.

The students of the GH+ group were more likely to get involved in a humanitarian association (22.3% versus 6.7%, p<0.001) and to have already taken part in a humanitarian action (20.5% vs 9.3%, p=0.002).

GH+ students were more likely to engage in professional practice abroad or in humanitarian medicine (67% versus 38%, p=0.001).

Work in vulnerable populations, as well as in low and middle-incomes countries, the impacts of climate change on health and OH are more frequent in GH+ group.

Conclusions. This study is innovative in France, through its sociological aspect and the identification of the profile and expectations of students in GH/OH. The principles of GH/OH are widely found in the group of GH+ students.

To overcome the recent threats posed by infectious disease and emerging zoonotic diseases as COVID-19 and early warning system, it is becoming clear that the entire health system must address the OH concept.

Given its importance for mitigating the public health threat from emerging infectious diseases the implementation of the GH and OH approach through multi-sectoral cooperative initiatives should be re-enforced.

Therefore, integrated training of future health professionals is a promising avenue for a better management of effect of sanitary crisis (i.e. pandemic, climate change and health effects, global surveillance-response system).

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CONCERNS REGARDING THE EFFECTS OF THE COVID19 PANDEMIC ON CHILDREN HEALTH

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Keywords: *COVID19 pandemic restrictions, online school, children physical and psychical/mental health.*

Introduction. The unexpected situations (lockdown, online school, social distancing) imposed to stop the spreading of the coronavirus COVID19 starting with March 2020 in most of the worldwide countries brought collateral effects for every citizen. Now, after more than a year, became a certitude that one of the most affected categories were the children, because of the restrictions and online school, that disrupted their habits. The concerns regarding the way are affected their physical and psychical development and health are growing between the researchers, as long as in many countries the restrictions are still in force. Also, there are big differences between countries, and even between regions of the same country about how strongly these restrictions are applied, meaning that discriminations occurred even more.

This article will reinforce the evidence on the risks for children's health and development due to pandemic restrictions on social interaction and education, based on the case of children from Bucharest. Starting from the conclusions of a literature review on these issues will be emphasized the conclusions of researchers from different countries regarding the main concerns about children's health.

Material and methods. For completing the image referring to these risks, will be analyzed the results of a quantitative research conducted with parents and their children from gymnasium school in Bucharest regarding the way they perceive how the pandemic restrictions changed their habits. Because for these children (from Bucharest) coming to school is still forbidden after more than one year (meaning 90% of the last one and a half school year was online) the research methods were also online, using questionnaires created and applied through Google forms. No sample methods could be applied (the questionnaire link was sent to all the parents with children of 11-14 years old from this school) and about 40% of them responded, pair parents-child.

Results. Th results showed that there is evidence that doing school online, not only the efficiency of learning is affected, but through the increase of time spent using the internet, their health and development are at risk. Issues like sedentarism, obesity, vision and eye or posture, and spine problems increase, being doubled by the psychical and mental impairment: stress, isolation, anxiety, depression, lack of attention and concentration, and increasing in cyberbullying and other online risks for children. The results showed that there is a need that the researchers, parents, and teachers' parts to keep a balance between keeping children (and their families) safe from coronavirus through restrictions and the negative collateral effects on their health and development that might affect them on the medium and long term.

Conclusions. The analysis showed that there are differences between parents and children's perceptions of the collateral effects of the pandemic on children's health and development, both on physical and psychical, mental level. Even this research study is limited and lacks statistical representativeness, through comparative analysis and cumulating this research results with the others at the international level, will be revealed and enhanced once more the fact that the collateral effects of pandemic and the social restrictions are real, and could have a meaningful negative impact on children development and health, on a long term.

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HEALTH PROMOTION AND HEALTH EDUCATION IN SCHOOLS

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Keywords: *health promotion, health education, schools, curriculum.*

Introduction. Health education at the school level is one of the main objectives of promoting a correct education on various aspects of health; at the same time forming indispensable attitudes and skills for a responsible and a healthy behavior for children. In the Republic of Moldova, health education is an optional course taught in schools, from the first to the twelfth grade, using age-appropriate programs and teaching materials for each educational cycle. There are several arguments in favor of health education in schools, one of them being the educational activity itself as a means for informing children and adolescents about different areas of culture and science, in parallel with the development of practical skills. In this sense, health education, as part of the medical sciences, aims not only to transmit a scientifically correct information to students, but also to create specific healthy individual behaviors, attitudes corresponding to the educational ideal.

Material and methods. The study was conducted in the period of September -December 2019 within 4 educational institutions. The study instrument included one questionnaire with 34 questions regarding health promotion and health education in schools. The curricula of the school discipline "Personal Development" and 20 teachers who were involved in teaching this class served as object of study. The data were analyzed trough Microsoft Excel and Epi Info 7.

Results. The assessment of the aims and objectives of this discipline determined that teachers pay less attention to the consultation regarding personal, family and community health, namely 60% in the primary classes and 40% in the gymnasium and high school classes, respectively, thus confirming the fact that teachers are not specialists in the field and are not involved in teaching this subject. Evaluation of the secondary data obtained following the questioning of the teachers from pre-university institutions, revealed that they strictly follow the curriculum for the course "Personal Development"; they hold the specific competences to teach this course and provide instruction and information to pupils in regard to different health issues, such as alcohol, drugs, tobacco, proper nutrition, physical activity, pregnancy prevention, prevention of sexually transmitted infections, HIV/AIDS, sex education, emotional health, stress avoidance, suicide prevention, prevention of violence and aggression, personal safety , prevention of food poisoning, depending on the pupils' age. Teachers strongly believe that this course is very important and necessary to be taught in schools. They strictly comply with the class schedule. Unfortunately, most teachers (80%) mentioned that they do not collaborate with local health departments and health organizations. Also, the relationship between family and school is not seen as a close one, especially in gymnasium and high school classes. The major problem is that instructors, who are involved in teaching subjects related to health education are not certified in this field.

Conclusions. Health education among students is necessary for raising awareness on health issues in terms of understanding the importance of hygienic behavior, promotion of healthy lifestyle and adopting a risk-free behavior. Moreover, it is crucial to develop an active position towards individual health and public health issues.

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PHYSICAL DEVELOPMENT AND EATING HABITS OF A GROUP OF TEENAGERS FROM DIMITRIE CANTEMIR HIGH SCHOOL IN IASI

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Keywords: *physical development, eating habits.*

Introduction. Eating habits are formed in the first years of life and sometimes persist throughout life. It is necessary to develop coherent nutritional educational programs to guide adolescents towards a healthy diet. It is an essential aspect in the current conditions when the identification with the ideal of beauty is essential, especially for girls. Also, great attention is needed because in Romania, especially in the area of Moldova, there is a strong anchoring in traditions, so that eating habits are difficult to change.

Material and methods. The study was conducted on a group of 194 students from the ninth grade (112 young people) and the twelfth grade (82 students) from Dimitrie Cantemir High School in Iasi. The study group consists of 126 girls (64.94%) and 68 boys (35.05%). These young people were appreciated for their physical development with the help of body mass index and eating habits. Eating habits were assessed on the basis of a weekly food intake questionnaire. The consumption of milk, chicken, meat dishes, vegetables and sugar/sweets was appreciated. The response variants are: zero, once a week, 2-3 times a week, 4-6 times a week and daily. The processing of the results was done on the classes and according to the sex of the students with the help of the Pearson test.

Results. Physical development falls mainly at normal values (68.55%). There are 19.07% underweight students but also 12.37% young people with obesity. The calculated differences are statistically insignificant by class, but significant ($p<0.01$) depending on the sex of the students. Attention is drawn to girls whose percentage of malnutrition is high. Milk is present in menus especially 2-3 times (35.05%) or 1 time (25.77%) per week, with insignificant differences by class and sex. Chicken meat is consumed mainly 2-3 times a week (42.78%) with insignificant differences by classes, but significant by sex ($p<0.001$). Girls have a high consumption of chicken meat that provides few calories per 100 g of product. Meat dishes are present in the students' diet, especially 2-3 times (31.95%) or once (27.31%) per week. There is a high percentage of girls who mark the zero variant, the calculated differences being statistically significant ($p<0.05$) depending on the sex of the young people, but statistically insignificant by classes. Vegetables are consumed especially 2-3 times (30.92%) per week or daily (28.35%), the calculated differences being statistically insignificant. Sugar/sweets are consumed mainly daily (29.89%) or 2-3 times (26.28%) per week. The calculated differences are statistically significant ($p<0.05$) and draw attention to girls who have an increased percentage of daily responses, but insignificant by classes.

Conclusions. The eating habits of students surveyed differently in girls than in boys, an aspect that draws attention to young females for whom identification with the current ideal of beauty is essential.

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COVID-19 VACCINE ACCEPTANCE, HESITANCY AND RESISTANCY AMONG UNIVERSITY STUDENTS IN FRANCE

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Keywords: *COVID-19, vaccine hesistancy, vaccine resistancy vaccine acceptantce, university student.*

Introduction. Young adults, specifically college students, are at risk of being infected with COVID-19 and transmitting the infection to others owing to their sense of invulnerability and can be a source of transmission to at-risk populations and could be the public acceptance of a new vaccine for COVID-19 developed within a short period remains uncertain despite the forthcoming availability. The objectives were to explore, among university students, the level of COVID-19 vaccine acceptance, hesitancy and resistancy and to determine the motivations and barriers, and the reasons that may change student vaccination decision making.

Material and methods. An online cross-sectional study was conducted among students of a French university in January 2021 with questions about the intention to be vaccinated against COVID-19, the motivations and the barriers: "Do you intend to be vaccinated against COVID-19 (when it is possible for you to do so)?" with the choice answers of: "Yes, absolutely"; "Yes, probably"; "No, probably not"; "No, certainly not" and "I don't know". Students reported the motivations or the reasons of hesitations with several possible answers.

Results. A total of 3089 students were included, with a mean of age of 20.3 (SD=1.9). A total of 3089 students were included, with a mean of age of 20.3 (SD=1.9), and 71.4% were female. The self-estimated knowledge of conventional vaccines and COVID-19 vaccines was 5.9/10 (2.3) and 4.9/10 (2.3), respectively. Confidence in the efficacy and safety of conventional vaccines (excluding COVID-19 vaccines) was 8.0/10 (2.3) and 7.7/10 (2.3), respectively. To the question on the intention to vaccinate against the COVID-19, 58.0% of students reported that they would choose to have a vaccination, 17.0% reported that they would not and 25.0% were not sure. The main motivation for vaccine acceptance were "I don't want to transmit COVID-19 to others", the main barrier for vaccine resistance or hesitancy were "I prefer to wait until I have more experience with these new vaccines". Age, female gender, being in first three years of study, studied sciences courses and neither sciences nor healthcare courses were significantly associated with a higher risk of vaccine hesitancy or resistancy. Self-estimated knowledge of conventional vaccines and COVID-19 vaccines, and confidence in efficiency and safety of conventional vaccination were associated with a lower risk of vaccine hesitancy or resistancy.

Conclusions. Our study shows that, in January 2021, before students have the opportunity to be vaccinated against COVID-19 in France, more than half of the students were vaccine acceptance, a quarter were hesitant, and one in five students were resistant. It is relevant to disseminate evidence-based interventions to promote COVID-19 vaccine acceptability for college students, especially for the students in neither sciences nor healthcare, as college students will soon be eligible to receive a COVID-19 vaccine. Preventive university medicine, campus-based student organizations, and college students could be consider designing educational programs and messaging that promotes behavioral confidence among college students to receive the COVID-19 vaccine.

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MEDICAL AND SOCIAL ASPECTS OF POPULATION SAFETY AND PROTECTION IN WARS AND ARMED CONFLICTS

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Keywords: *war, armed conflict, population, social and medical risks.*

Introduction. The concept of war and armed conflict refers to any confrontation in order to provide contradiction resolution between states, peoples, and social groups by means of armed forces. The war and military conflicts are divided into regional and global ones, depending on their aims, scale and intensity. Actually, these are a policy continuity of specific powers regardless of the reasons of their emergence (political, economic, territorial or religious). During the conflicts, both overall human and health losses among the participating military personnel, as well as overall human and health losses among the civilian population (collateral losses) occur.

Material and methods. The purpose of the present study review was to highlight both medical and social aspects, as well as the risk management related to wars and military conflicts worldwide, especially in Afghanistan, the Dniester, Chechnya, Georgia, Ukraine, and North Karabakh. The studied bibliographic sources provided extensive data on the wars and armed conflicts worldwide and their consequences on the civilian population from these impacted areas. The study was conducted by using historical and descriptive methods based on the keywords, which emphasize the medical, social and economic impact of the presented issue.

Results. The study showed that the medical and social aspects of wars and armed conflicts are determined both by direct or indirect action of the destructive nature of weapons, military equipment, and the precarious sanitary-epidemiological situation occurring within the affected localities and regions, followed by total or partial damage of community social infrastructure, healthcare facilities, as well as uncontrolled mass migration of the civilian population.

The main directions regarding the security and protection of the civilian population during wars and military conflicts are aimed at providing medical assistance according to the medical guidelines, evacuation from high-risk areas, organizing and performing sanitary-hygienic and anti-epidemic measures among the civilian population and refugees, who are placed in camps or specific areas provided by the host government.

These specific measures are carried out according to international convention requirements on the protection and safety of civilians during war and military conflicts. It is essential to plan, coordinate and interact these means with military, civilian, medical-military and health care bodies, as well as with international organizations, namely the United Nations and the World Health Organization.

Conclusions. Despite that, national and international communities are actively taking part in maintaining world peace, the wars and military conflicts continue to be a current global issue. Thus, the safety and protection of the civilian population must be a priority for local, regional and international organizations, considering previous experience gained from wars and armed conflicts.

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CHARACTERISTICS OF DOCTORS' ACTIVITY

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Keywords: *risk factors, morbidity, physicians.*

Introduction. The doctor is the person, who plays the key role in maintaining the human health, thus showing both a decisive and a major role in the treatment and recovery of the whole population. Therefore, greater attention should be paid to healthcare staff, since their overall health condition is directly dependent upon the health care quality provided to patients and, consequently, resulting in patients' faster recovery and employment. The study of both characteristics and risk factors of healthcare personnel activity is an important current issue. This paper aimed to evaluate the characteristics therapeutic patients, as well as to develop means of improving the health condition of therapists.

Material and methods. A cross-sectional epidemiological study was carried out. The study included 51 physicians, who work within public medical institutions from the Republic of Moldova. The research was conducted between 2019-2020. The total number of physicians consisted of 72.5% of females and 27.5% of males. The mean age was 46.15±0.91 years. Questionnaires and data from specialized literature were used for collecting primary data. Primary data processing was performed on the computer via the Microsoft Excel statistical program.

Results. The working conditions of the therapeutic department were assessed. Thus, 31.4% of doctors reported working less than 7 hours/day, 31.4% – 8 hours/day, and 37.3% more than 8 hours/day. Night shifts were reported in 27.5% of cases, whereas only 29.4% were satisfied with their current salary. 70.58% of personnel have a meal break and 49% of doctors have their main meals. Forensic issues were reported in 11.8% of cases. As regarding the sleeping hours, 62.7% of personnel sleep less than 7 h/day, 33.3% – 7/8 h/day, and 3.9% more than 8 h/day. The assessment of stress triggers showed the following results: 33.3% doctors feel stressed daily, 52.9% – weekly, and 13.7% – never feel stressed. The stressful conditions were reported mainly due to collective employment conflicts viz. 19.6% of cases. Physicians were found to be exposed to the following risk factors: chemicals – in 17.64% cases, biological factors – 29.41%, ionizing radiation – 13.72%, noise (ventilation devices) – 1.96%, ultrasound – 1.96%, 5.88% are exposed to stress, and 29.4% doctors reported no exposure to the above listed risk factors. The presence of chronic diseases was reported in 45% of doctors, each doctor suffering from two or more chronic disorders simultaneously. The most common ones included hypertension, diabetes and chronic pancreatitis. 11.76% of doctors frequently suffered from severe diseases. Occasional alcohol consumption was registered in 72.5% of cases, of which 17.6% were smokers. On the other hand, daily sports practice was reported by 17.6% of doctors, occasionally – 56.9% and 25.5% – did not practice sports.

Conclusions. Most physicians reported daily exposure to risk factors and a high level of stress, including poor salary satisfaction, which may eventually have an impact on both the personnel health and activity.

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ANTIBIOTIC RESISTANCE AND BIOFILM FORMATION OF STRAINS ISOLATED FROM TROPHIC ULCERS

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Keywords: *biofilm formation, antibiotic resistance, trophic ulcers.*

Introduction. The advancement of biomedical science has enabled to study the microorganisms in their natural environment, whereas over 95% of microorganisms existing in nature are in biofilms. Biofilm formation is an important strategy by which microorganisms survive and adapt in natural environments. Bacteria living in a biofilm usually have significantly different properties from free-floating bacteria of the same species, being protected by a dense biofilm structure, which allows them to cooperate and interact in different manners. The main features of the biofilms are their high resistance to disinfectants and antimicrobial drugs, whereas the thick extracellular matrix and the outer layer cells protect the interior of the community. It is estimated that microbial biofilms play a major role in over 80% of infections. Sixty percent of healthcare-associated infections are due to biofilm formation on medical implants. Moreover, many chronic diseases are associated with biofilms, such as infectious endocarditis, cystic fibrosis pneumonia, periodontitis, chronic rhinosinusitis, trophic ulcers and otitis media.

Material and methods. The study was carried on 128 samples isolated from trophic ulcers. The microbial strains involved in the process were isolated in pure cultures, under laboratory condi-tions, and subsequently identified by classical microbiological methods and Vitek2 Compact system (BioMerieux), based on the morpho-biological, coloring and biochem-ical properties. The antimicrobial susceptibility and biofilm-forming ability testing was performed using the Kirby-Bauer disk diffusion technique and the quantitative adhe-sion test, respectively. Strains that showed resistance to three or more antibiotic groups were considered poly-resistant ones.

Results. Bacteriological examination was carried out on 128 samples collected from patients with trophic ulcers. A single species of microorganisms was isolated in 35.9% of cases, two and more species in 53.1% and no microorganisms were isolated in 10.9% of cases. A total of 211 microbial strains were isolated and identified. The antibiotic susceptibility tests of strains isolated from trophic ulcers showed a high level of resistance to drug preparations. Of the 211 microbial strains isolated from trophic ulcers, 147 (69.7%) strains produced detectable biofilms (OD>0.112). As regarding the biofilm status, 58 (39.5%) isolates produced strong biofilms (OD>0.220), 67 isolates (45.6%) – moderate biofilms (OD 0.112-0.220) and 22 isolates (14.9%) – weak biofilms. The antibiotic resistance of biofilm-forming compared to non-biofilm-forming strains showed that biofilm-forming strains had a higher resistance to all groups of drugs tested.

Conclusions. The study results revealed a higher biofilm formation capacity at the strains isolated from trophic ulcers, as well as higher rates of antimicrobial resistance in biofilm-producing strains compared to non-producing ones. The obtained data proves a strong correlation between biofilm formation capacity and antimicrobial resistance patterns. The implementation of the relevant antimicrobial susceptibility testing of biofilm-producing strains will improve the management of infections caused by these microorganisms, as well as provide feasible strategies to prevent their spread.

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NANOTECHNOLOGY APPROACHES FOR FUNGAL DISEASES

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Keywords: *antifungal drug, nanotechnology, silver nanoparticles, fungal disease.*

Introduction. Diseases caused by fungi affect millions of people every year worldwide and most of these infections requiring hospitalization and advanced treatment. Therefore, well-timed and appropriate laboratory diagnostic, treatment of invasive fungal infections (IFIs) are major importance in the management of these diseases. The analyzed scientific studies highlighted that despite the drug availability on the market aimed to treat these infections, their efficiency is arguable, while their side effects cannot be significant. As for the drawbacks of the available drugs, these are related to their physical-chemical properties Antifungal medicine is usually of hydrophobic character meaning they have poor solubility in water. Both issues lead to limitations in terms of their efficacy and efficiency within the clinical settings. Therefore, scientific studies on development of new antifungal compounds are urgently required. The purpose of the study was to carry out an analysis of the specialized literature related to nanotechnology approaches for fungal diseases, a new emerging novelty in treatment of IFIs.

Material and methods. The study is based on 45 literature sources written by foreign authors (from USA, Italy, Germany, Canada, Spain, Romania etc.). Most publications come from highly developed countries. The bibliographic search was performed on the evidence-based sources, on the mostly relevant databases – such as PubMed, HINARI, Google Scholar. The filter for the publication date has been set for the last 10 years.

Results. Over the recent decades, a specific scientific interest was given to nanotechnology, which has become an extremely well-known and researched domain. The high incidence of fungal infections has become a worrisome public health issue. The major issue among these is the resistance to antifungals, an increasing hazard for the effective treatment of IFI, which make therapy difficult sometimes even impossible. Late diagnosis and delayed treatment are the top causes for the high morbidity and mortality rates of IFIs. A number of studies reported challenges in using antifungals including but not limited to diminished efficacy of medication, limited drug penetration through tissue, low solubility in water, decreased bioavailability, and poor drug pharmacokinetic properties. Apart from the physical-chemical limitations, the low number of available antifungal agents is also accompanied by their toxicity and high resistance.

Currently, the treatment approach for IFIs is rather limited and includes three main classes of drugs, such as polyenes, azoles, and echinocandins.

Considering that there is a stringent need for alternatives in treatment of invasive fungal infections, it is believed that nanostructured systems are the solution, since they could be excellent carriers for antifungal drugs. Studies that investigated the innovative therapeutic techniques via nanotechnology and medically important fungi have established that there are compelling enhancements in the antifungal properties, such as bioavailability, toxicity, and target tissue for some antifungal drugs.

Conclusions. In conclusion, there is an obvious requirement for new therapeutic alternatives for IFIs due to the low number of drugs and their high resistance to antifungal agents, mainly in medically relevant fungi. The well-timed and adequate pathogen detection is decisive for disease management and prevention of drug resistance, thus aiding in the prevention of therapeutic failures and death in case of invasive fungal infections. There is an urgent need for cutting-edge and cost-effective nanotechnologies providing management of fungal diseases, which are considered challenging issues facing today's health systems.

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INTERNATIONAL NETWORK FOR IMPROVING OCCUPATIONAL HEALTH IN MOLDOVA

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Keywords: *international network, partnership, knowledge sharing, occupational health and safety.*

Introduction. Working conditions and occupation are important determinants of health at the social level. Every year, almost 1.3 million people die from a work-related disease in the G20 countries and about 221,000 suffer a fatal occupational accident.

Socio-economic instability in the Republic of Moldova in the last 30 years has resulted in negative repercussions on public health, which are characterized by excessive mortality of the working age population, low birth rate, negative natural increase. With regard to the health status of the working population, it is worth mentioning the practical reduction to zero of cases of occupational diseases against the background of constant growth of jobs that do not meet occupational health standards: by microclimate factors (38.4%), by intensity of noise (25.7%) and tremors (8.6%), by content of toxic substances (11.5%) and dust (9.7%). It should also be noted that in regular medical examinations of workers exposed to risk factors, on average only up to 3% are detected with work-related disease, while WHO experts claim that at least 35% of employees suffer from chronic diseases that require surveillance.

Recently, the Parliament of the Republic of Moldova ratified the ILO Convention Nr.161 on occupational health services. The ratification settings require elaboration of policies, legislation and a national program related to health and safety at the workplace. At present, the Republic of Moldova is facing essential challenges in organizing its Occupational Health services.

Material and methods. An international collaborative network was set up between Moldova, Italy and Hungary, resulting in the elaboration of the Project „Improving Occupational Health and Safety System in Republic of Moldova".

The project involves the assessment of the most appropriate research methodologies for estimating risk factors due to occupational exposures. Also, it implies studying and assessment of the national legislative and normative acts in order to facilitate implementation of ILO Convention No. 161. The curriculum of the occupational health disciplines in medical education institutions will be reviewed in order to highlight the weaknesses in the local education. Communication, dissemination, skill developing, and knowledge sharing will be integral parts of the project.

Results. Occupational health and safety specialists from the Republic of Moldova will benefit directly from a new type of working experience – "learning through research", in accordance with European and international regulations. In the long term, this trilateral collaboration will lead to the development of research and communication programs on the European scale. The project will help to provide more data on the current state of occupational health and safety fields in the Republic of Moldova. Also, the partnership with Republic of Moldova will create opportunities to share Italian and Hungarian experiences in occupational health and safety.

Conclusions. Collaboration and partnership bring benefits to both beneficiary and knowledge sharing countries.

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EXPOSURE TO PESTICIDE - SAFETY PROBLEM

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Keywords: *pesticides, health, endocrine system.*

Introduction. Despite the popularity and widespread use of pesticides, there are serious concerns about the health risks arising from farmers' exposure to the preparation and application of pesticides or in treated fields and residues from agri-food products and drinking water consumed by the population. Pesticides contain active ingredients - dangerous and harmful toxic chemicals that can affect human health. The dangers to humans and animals due to pesticides are mainly related to the active ingredient. By their nature, most pesticides have a high degree of toxicity because they are intended to kill certain organisms and thus create a high risk. The direct influence of pollutants on the health of the population consists in the changes that occur in the body Chronic intoxications can manifest as hepatitis, gastritis, bronchitis, polyneuritis, etc.

Material and methods. The study was conducted on the basis of statistical data of the National Bureau of Statistics of the Republic of Moldova, Form 2 - Report on the stock and use of phytosanitary products of the National Agency for Food Safety.

Results. Exposure to pesticides poses a continuing health hazard, especially in the agricultural work environment. Some active ingredients in pesticides have the characteristics of endocrine disruptors. In 2019, a quantity of 2100 tons of pesticides was used in the territory of the republic, and the number of products reaching 932. Out of the total number of 932 pesticides used in the country in the agricultural field, 179 are produced, including 19 active substances from the class products with negative effects on the endocrine system. For example, products containing the active ingredient fenoxicarb were used in a number of 6. Pesticides that disrupt the endocrine system are the largest group of endocrine disruptors compared to other chemical groups. Health care involves understanding the risk factors for the occurrence of various diseases. It should be mentioned that, lately, more and more frequently appear conditions for the simultaneous penetration of one and the same harmful agent through the respiratory tract, through the gastrointestinal tract and through the skin. In other cases, different harmful factors may act on the body at the same time. As a result of estimating the morbidity of the population, there was a high frequency of tumors, diseases of the circulatory, respiratory and digestive system.

The study is conducted in order to determine and monitoring chemicals that affect the endocrine system, used in Moldova and to which the country's population is exposed. Knowledge and determination of environmental risk factors are of particular importance for promoting and maintaining the health of the population.

Conclusions. In this context, the use of pesticides has raised serious concerns not only about the potential effects on human health, but also on the impact on wildlife and sensitive ecosystems. No pesticide is not without dangers when applied or manipulated! The phenomenon of the effects of endocrine disruptors on the health of the population remains a global challenge and a source of concern for the Public Health Service. Hygienic assessment of pesticide use processes, elaboration and implementation of preventive measures are a priority in reducing health risks.

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FOOD ALERTS AND HEALTH RISKS IN ROMANIAN ONLINE MEDIA

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Keywords: *food alerts, food risks, public health, online media, Romania.*

Introduction. In Romania, National Authority for Veterinary Health and Food Safety (NAVHFS) is the institution that coordinates all the activities focused on ensuring food safety by identifying the risky products and eliminating these risks.

Material and methods. The purpose of the research was to analyze the way in which the online media communicates the food incidents identified by The National Authority for Veterinary Health and Food Safety. Starting from the list of products that reappeared on the market in 2019 (available list on the website NAVHFS), I evaluated the way in which media communicates about alerts regarding the reappearance of some products infected with Listeria Monocytogenes, Salmonella or that contained unknown substances/unidentified objects. The methodology of the research included the content analysis of the articles identified in the online media. In order to identify the articles, I used key words (food alert, Listeria infections alert, Salmonella infections alert) which I introduced in Google Chrome. The analyzed corpus was of N=119 articles selected according to the mentioned criteria and published in the period January 1st, 2019 – January 1st, 2020.

The analysis grid was structured in such way as to allow the identification of some information regarding: the media type, time period, information regarding symptoms, information regarding health consequences, categories of risk population, presence/absence of recommendations regarding necessary measures for protecting the consumer, categories of people who communicate about alerts. The information was analyzed with the help of SPSS 22.2.

Results. More than half of the alerts issued by NAVHFS were given for salmon (8 out of 14 alerts). Only two alerts were given for chicken or pork. However, the articles from the online media inform the population to a greater extent about the alerts given for the chicken, pork or beef products (59 articles out of 119).

The articles include information about withdrawn products or name the shop chain that sells the products, but they do not present information about health consequences or measures which need to be taken by the population in order to protect their health or in order to be given a refund. Only 14.2% contain information about the diseases caused by consuming such infected products. Almost half of the articles (47%) include information regarding the consequences of consuming spoiled/infected products. Approximately one third of the articles mentions risk groups, i.e. the people who are exposed to the highest risks if they consume Listeria or Salmonella infected products or products that contain many substances that cause allergies. Two out of five articles contain recommendations for the population.

Conclusions. The way in which the online media from Romania present the food alerts is different from the way in which traditional media or social media from other countries cover this subject. In Romania journalists include only two topics (scientific and economic topic), while the article from the international media covers four topics (scientific, economic, political and social – Shan et al 2014).

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POSSIBLE ALGORITHMS FOR DETERMINING ADVERSE REACTIONS CAUSED BY FOOD SUPPLEMENTS IN ROMANIA

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Keywords: *nutrivigilence, algorithms, side effects, health.*

Introduction. The advertising of food supplements on various media channels or in specialty stores with natural products and other stores, as well as the lack of informative and educational programs for the population on side effects and the interaction of food supplements with food and drugs, have led to the development of uncontrolled marketing of these products. Through this paper we want to present the algorithms that can be applied to determine the side effects caused by food supplements in Romania, the need to initiate a legislative project on reporting these side effects and educating the population on the consumption of food supplements.

Material and methods. PubMed, ResearchGate and EUR-Lex databases (online portal providing access to EU legislation) were analyzed between 2015-2021, based on search criteria: adverse reactions, ingredient new food, food supplements, algorithms.

Results. Dietary supplements concentrated sources of nutrients or other substances with a beneficial nutritional or physiological effect intended to supplement a normal diet. They can be sold as capsules, dragees, tablets, sachets or in bottles. Certain dietary supplements can cause multiple side effects, such as: impaired platelet function by decreased platelet aggregation, gastrointestinal side effects (diarrhea, vomiting), decreased wound healing/epithelialization, bacterial or fungal sepsis, most common in patients older. Probiotics that can cause human sepsis, generally in elderly patients and those suffering from chronic diseases, are *Lactobacilli* (strains of *L. rhamnosis*, due to its high translocation potential), *Lactobacillus sp.* bacteremia which is sometimes fatal, infectious endocarditis caused by *L. rhamnosus, L. casei, L. acidophilus, L. jensenii, L. plantarum* and *L. paracasei.* They can cause anaphylactic response in patients who have undergone cardiovascular surgery or localized infection in diabetes associated with old age and liver transplantation. Side effects have also been found with mineral supplements, omega 3 / fish oil, soy protein, soy protein, plant nutrients, antioxidants, anti-inflammatory, supplements for weight loss or bodybuilding, various botanical supplements. Multi-skeletal distortion, fatigue, pain and gastrointestinal symptoms and hepatic adverse events have been reported with the nutraceutical ingredient RYR (red rice yeast) at the doses recommended by EFSA (European Food Safety Authority). With the exception of "classic" foods (hazelnuts, nuts, eggs, etc.) known to cause certain side effects such as allergies, the development of the food industry has led to the emergence of foods eaten especially by teenagers, such as energy drinks. Frequent consumption of this type of drink was significantly associated with asthma, allergic rhinitis and atopic dermatitis, high stress, lack of sleep, poor school performance and suicide attempts in Korean adolescents.

Conclusions. It is imperative to legislate the reporting of adverse reactions caused by food supplements, including their interaction with food or medicine. The veracity of the practical applicability of the legislation and the existence of an educational program of the population, make this action not to become null and void. Using the algorithms applied to analyze the severity - causality of adverse reactions caused by drugs, in Romania, nutrivigilence can be implemented for the health and safety of the population.

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FACTORS INFLUENCING THE HEALTH STATUS OF YOUNG ATHLETES

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Keywords: *young athletes, lifestyle, risk factors, prevention.*

Introduction. The conditions of the occupational and living environment, and behavioral factors have a special importance in maintaining and strengthening the health of athletes, as well as in obtaining sports performance.

Material and methods. In order to highlight possible health risk factors, it was developed a questionnaire to study the social and hygienic aspects, the health status and nutritional behaviors of young athletes practicing football, basketball, volleyball, handball and tennis. The target group consisted of 173 athletes from Chisinau, aged between 15-18 y.o.

Results. It was found that junior athletes feel stress with different frequency, namely: rarely in 32.0-66.7% of cases, occasionally in 13.3-60% of cases and quite often 4.5-30,3%. It was found that 6.9% of junior athletes report unsatisfactory training conditions. We also considered it important to evaluate the psychological climate during the training activities of junior athletes. An inappropriate psychological climate was reported by 11.0% of respondents. The highest rate of the very tense psychological climate was declared by footballers - 31.6%, followed by handball players - 11.1%. Less than half (45.7%) of the respondents were firm in their opinion that they eat healthy, showing a significant divergence depending on the chosen sport - from 23.3% among tennis players to 57.4% among football players. Every seventh respondent stated that they did not keep track of their diet - 14.5%, which further confirms the lower level of knowledge of health promotion and gaps in activities to promote a healthy lifestyle. On average per total sample size, 75.1% of respondents usually have breakfast, of which over 60% of people have 1-2 servings. More often, for breakfast, they serve porridge (47.8%), omelet or boiled eggs (38.4%), bread with butter and tea (60.8%). It was negatively estimated that 3.4% of respondents per total sample size, omit lunch, as a rule, and 7.5% of people who eat lunch (from 3.0% among those who play handball to 16.0% of among those who practice volleyball) do not serve first course. At the same time, on average 50.3% per total sample size, with fluctuations from 44.0% (volleyball) to 59.1% (football), serve the first course with a frequency of 2-3 times a week. Respondents' views on the consumption of nutritional supplements and biologically active substances differ from one sports type to another. It should be noted that the share of people who stated that they have knowledge about biologically active substances ranged from 13.3% in the group of young athletes, who play tennis and volleyball, to 33.3% in the group of football players, a fact estimated negatively from the point of view of public health, since uninformed people, as a rule, make a lot of mistakes, which have a negative impact on their health. The highest share of respondents who stated that they do not have knowledge in that field was registered in the group of footballers - 52.7%.

Conclusions. The level of providing the body with various nutrients and energy among junior athletes, as a result of the consumption of the studied rations, is different depending on the sport practiced, and partly depending on their gender.

The appropriate hygienic and training conditions, compliance with the requirements for a balanced nutrition, regular medical examinations, and prevention of injuries can help maintaining the health of junior athletes, thus ensuring its durability.

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STRESS AMONG LOCAL AND INTERNATIONAL MEDICAL STUDENTS

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Keywords: *instructional stress, local students, international students.*

Introduction. The contemporary student lives in an extremely unstable and unpredictable society, from all points of view and deficient in terms of sharing positive emotions. The continuous changes occurring in a student's life require constant efforts, actions, visions, attitudes and new skills that he/she must develop in order to keep pace with the world and at the same time be useful to the society of which he is part.

Lots of research has been done on stress among students, especially those involving medical, pharmacy and dentistry students. Fewer research is found on the stress of students studying in a foreign country, in a different language than the native one. Students find it challenging to adapt to a new way of life, to learn to cope on their own, starting with cooking and ending with all sorts of new things, which at home were usually performed by their parents, brothers and sisters.

Material and methods. The research was based on comparing the level of stress among local and international students, using a questionnaire with 2 standardized tests (Test to identify instructional stress; Test of inventory of stress symptoms). The study involved 114 people: 51 local students and 63 international students.

Results. The study findings show that the local students report a double score for all the complaints related to the instructional process. The complaints presented by the students indicate large variations in the score for various complaints at local students, with scores between 3.2 and 7 points (out of a maximum of 10 points). In the case of international students, even if the scores are lower for all the complaints presented, the amplitude of the variations is not large, being registered between 2.0 and 2.8 points (out of a maximum of 10 points).

The highest score for the complaints presented by local students was the feeling of constant lack of time (7 points out of 10) , whereas for international students three groups of complaints ranked first viz. headaches; increased irritability, upset and distraction; (2.8 out of 10 points). On the second place, the complaints regarding the quality of sleep among the local students were registered (6.7 points out of 10), whereas among the international students - the irrelevant thoughts (2.7 points out of 10). Low work capacity and increased fatigue were ranked third among local students (6.5 points out of 10), while international students reported insufficient sleep, poor quality and lack of time (2.6 points out of 10).

The inventory of stress symptoms showed that local students are more stressed than international ones. About a third of local students are exhausted, they have irreversible consequences due to stress. Most local students feel severe (39.2%) and pronounced (21.5%) stress. Only 5.9% of local students experienced moderate stress and 3.9% were not stressed. Half of the international students are stressed, and a quarter of students have moderate stress. Stress is missing in only a quarter of international students.

Conclusions. Both the Instructional Stress Identification Test and the Inventory of Stress Symptoms recorded a higher level of stress among local students rather than in international ones. Early detection of symptoms is important to prevent stress. The interdependent relationship between the perceived stress and symptoms of anxiety and depression suggests that one of the prevention strategies could even be the stress detection among first-year medical students.

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INFORMING MEDICAL STUDENTS ABOUT THE EFFECTS OF CLIMATE CHANGE ON HEALTH

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Keywords: *climate change, health, medical students.*

Introduction. The phenomenon of climate change increases the risk of health problems, having direct and indirect effects. Physicians of all specialties, through their role as promoters and educators in the field of health, are reliable sources of information. Thus, medical education must undergo transformations, an era in which medical universities are the basic link attributed to raising awareness of the role of health workers in the process of preventing the undesirable effects of climate change and adapting to new living conditions must begin. A medical curriculum on climate change has the greatest potential to reach large cohorts of professionals and allow for standardization between institutions.

The aim of the study was to establish the need for medical students in information, additional knowledge about the problems of climate change, global warming, heatwaves, heat stress, their health consequences and prevention measures.

Material and methods. A described study was designed applying the sociological method, using an elaborate questionnaire. The study involved 101 medical students. In order to elaborate the questionnaire and study the topicality of the problem, 18 bibliographic sources selected in PubMed were analyzed.

Results. By conducting this study, we were asked whether medical students need more information about the problems of climate change, global warming, heatwaves, heat stress, their health consequences, prevention measures and correct behavior.

About 2/3 (66 people) of respondents stated the need to supplement knowledge on the influence of global warming on human health in professional activity. Of the 66 respondents, only 46 agreed to answer the open-ended question about what they would actually be interested in knowing. Respondents' responses practically cover all information related to global warming (starting with the factors, causes of global warming) and health (influence, prevention measures, adaptation). Most of the answers were concrete, but there were also answers like: "Everything about global warming", "As much as possible", "Everything related to the heat".

Among the respondents who were interested in the issues of global warming, requests for additional information referred to: "Risks caused by global warming on the environment and the human body, on different age groups, on patients with various diseases", "Negative impact of global warming on human health","Consequences of global warming (evidence-based; direct and indirect) on the body ","Evolution and dynamics of diseases depending on changes in the environment", Results of clinical trials" other respondents specifically stated that they are interested in the impact on the cardiovascular, respiratory system.

Most respondents are also interested in "Measures, methods to prevent the adverse effects of global warming on human health", "Mechanisms and projects that are implemented to reduce environmental pollution", "Protective measures for people with chronic diseases", "How it is recommended to be the diet, because fruits and vegetables also suffer from overheating "," How to protect ourselves and prevent the consequences of global warming on human health ".

Conclusions. Both the general answers of the respondents and the lack of answer to the open-ended question confirm the need to raise awareness of the problem and increase the level of knowledge.

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THE ETIOLOGY OF HEALTHCARE-ASSOCIATED INFECTIONS IN NEWBORNS

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Keywords:
healthcare-associated infections, newborns, bacteria, gram positive, gram negative.

Introduction. Healthcare-associated infections (HAI) represent a major health problem of modern medicine. These are the leading cause of morbidity worldwide, as well as being a challenge for the healthcare system and the entire medical community. The foremost issue regarding current human pathology is the healthcare-associated infections in newborns, which play a specific role by exhibiting high incidence and serious outcomes, thereby contributing to a sudden increase in the treatment costs, as well as due to their related economic, moral and social impact. HAI are frequent complications in neonatal intensive care units with varying risk factors and bacteriological profile. Healthcare-associated infections in newborns have become one of the major problems of contemporary health assistance requiring the implementation of specific strategies and objectives for prevention and management.

Material and methods. This present study is a review of the relevant literature data, published in online medical databases such as Medline (PubMed) and Scopus, Google Scholar, WHO websites and CDC, which refer to healthcare-associated infections in newborns.

Results. Health care-associated infections are infections that occur while receiving health care, developed in a hospital or other health care facility that first appear 48 hours or more after hospital admission, or within 30 days after having received health care. The literature review showed that the conditionally pathogenic gram-negative and gram-positive bacteria play an important role in the etiology of non-specific infections. The etiological structure of healthcare-associated infections and the particularities of the causative agents depend on the type of healthcare institution, the age of the patients, the modern instrumental methods of diagnosis and treatment, as well as other factors. The microorganisms isolated from healthcare-associated infections in newborns were as following: *Escherichia coli, Pseudomonas aeroginosa, Acinetobacter baumannii, Staphylococcus aureus, Enterococcus cloacae, Staphylococcus epidermidis, Klebsiella pneumoniae* and *Proteus mirabilis*. At the same time, the literature data revealed a higher incidence of monoinfections compared to mixed infections. The most common reported cases of healthcare-associated infections involved respiratory tract infections (60.3%), followed by eye infections (15.5%), skin and soft-tissue infections (8.6%), bloodstream infections (6.8%), gastrointestinal tract infections (5.1%) and bone infections (3.4%), as well.

Conclusions. Healthcare-associated infections are an ongoing issue for clinical medicine which often lead to life-threatening conditions. A nonspecific infection is directly associated with the immune status, including the naturally-acquired factors in newborns. Effective prevention and treatment of in healthcare-associated infections the require an understanding of the distribution of pathogens, the various patient-related risk factors for these infections, and the roles of medications and invasive procedures in predisposing to their occurrence.

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METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS*: AN OVERVIEW OF BASIC AND CLINICAL RESEARCH

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Keywords: *MRSA, Staphylococcus aureus, antibacterial resistance, Healthcare Associated Infection.*

Introduction. Staphylococcal infections are the leading cause of healthcare-associated infections globally as well as in Republic of Moldova. According to different studies – this pathogen is highly spreading among surgical and intensive care units' inpatients. Making part of normal microbiota *Staphylococcus* spp. can populate skin and upper respiratory ways and as a result – it can be transmitted by different routes.

An extra issue represents acquired antibacterial resistance of pathogens. The mostly common one is Methicillin-resistant *Staphylococcus aureus* (MRSA). Thus, it is very important to study this issue in order to detect and treat these infections faster and more efficient. Nowadays, different methods of bacteriological and immunological investigation, as well as new technologies of drug industry are available.

Material and methods. The objective of the study was to perform an analysis of the scientific literature related to etiology, epidemiology, diagnostic methods and prevention measures of MRSA infections. The bibliographic search was performed on the evidence-based sources, on the mostly relevant data bases – such as PubMed, HINARI, Google Scholar and other relevant sources.

Results. More studies have shown large affections within MRSA infected patients. MRSA bacteremia is a serious infection resulting in 20-50% 90-day mortality. Some authors do declare that vancomycin (VCM), the current standard therapy for MRSA, make treatment difficult. The use of vancomycin has been increasing since the mid-1980s, resulting in the emergence of MRSA with reduced susceptibility to vancomycin.

Another paper have shown that the prevalence of *S. aureus* and MRSA among healthcare workers (HCWs) was found to be 22.7% and 32.8% respectively. Regarding survival rate without and with VCM therapy, was 53.1 and 82.1% in the non-intervention and intervention groups, respectively. And meanwhile one paper says the only other approved drug for treatment of MRSA bacteremia, daptomycin, has not been shown to be superior to VMC, another one pretends that linezolid could be better than VMC.

Conclusions. Since 1980s – the first option for the treatment of invasive MRSA infections is the glycopeptide vancomycin, which continues to be the reference standard approach in this context. Anyways it has its limitations, which makes actual necessity of developing more efficient and harmless drugs.

Based on the combined analysis of randomized controlled trials, the efficacy of linezolid should be better than that of vancomycin in the treatment of infections caused by MRSA, but conclusions still need to be further validated by more well-designed randomized controlled trials of a large sample.

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ANTIBIOTIC RESISTANCE OF *PSEUDOMONAS AERUGINOSA* STRAINS ISOLATED FROM PATIENTS

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Keywords: *Pseudomonas aeruginosa, antibiotic resistance, multi-drug resistance.*

Introduction. Antimicrobial resistance represents a global burden and crisis but also a significant threat to public health nowadays. Healthcare-associated infections with multidrug resistant (MDR) bacteria lead to increased morbidity rates, with a continuous increasing incidence at global levels. The selective pressure created by the widespread use of antibiotics might be the main explanation of this burden. It is known that P. aeruginosa is one of the most frequent bacteria involved in the etiology of ventilator-associated pneumonia, with a relative high prevalence in patients admitted to intensive care units and a high mortality rate. Studies showed that the presence of MDR strains could be an important predictor of hospital death. The aim of this study was to evaluate antimicrobial resistance patterns of P. aeruginosa strains isolated from various clinical specimens of hospitalized patients

Material and methods. We conducted a retrospective study during January–December 2020. Isolation of *P. aeruginosa* strains was performed on selective media for Gram-negative. Identification of strains was done both by conventional methods and by automated methods using Vitek®2 Compact. Antibiotic susceptibility testing was done using the Vitek®2Compact, but also by Kirby-Bauer method. Interpretation susceptibility was performed according to the EUCAST (European Committee on Antimicrobial Susceptibility Testing).

Results. They were analyzed 118 isolates from patients hospitalized in surgical wards, 51.2% male, respectively 48.8% women. These strains were isolated from different pathological products: lower tract respirator (39.9%), pus (35.6%), urine (15.4%), central venous catheter insertion (2.7), blood (2.1%) and other secretions (4.3%).

P. aeruginosa strains showed the following levels of antibiotic resistance, respectively, 70.7% to ticarcillin, 58.7% to piperacillin, while resistance to the penicillins combined with beta-lactamase inhibitors, piperacillin with tazobactam was 43.5%. Resistance to antipseudomonal cephalosporins was 37.9% to ceftazidime and 50.8% to cefepime, while the level of resistance to carbapenems was 55.9 % to imipenem and 27.1% to meropenem. Resistance to aminoglycosides was 51.9% to gentamicin, 58.4% to tobramycin and 34.4% to amikacin. 62.8% of strains showed resistance to fluoroquinolones (ciprofloxacin).

Conclusions. Multidrug resistance is common and increasing. Occurrence of these MDR strain in clinical care settings makes them difficult and expensive to treat because these drug resistant strain are exhibit resistance to essentially all reliable antipseudomonal antibiotics. The available clinical solution for antibiotic resistance *Pseudomonas aeruginosa* infections requires a precise diagnostic and combination antibiotic therapy based on diagnostics. Judicious administration of antibiotics in combination with nosocomial infection control measures need to be introduced in hospitals to prevent the circulation of these multidrugresistant strains.

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EMERGENCE OF CARBAPENEM-RESISTANT ENTEROBACTERIACEAE: OVERVIEW OF A MAJOR PUBLIC HEALTH CHALLENGE

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Keywords: *Carbapenemase, Enterobacteriaceae, CPE, KPC, OXA-48, IMP, VIM- and NDM.*

Introduction. Antimicrobial resistance (AMR) is a global public-health emergency, which threatens the advances obtained by modern medical care during the past century. Carbapenemase-producing *Enterobacteriaceae* (CPE) has been steadily spreading worldwide during the last decade. CRE are often a cause of invasive infections associated with prolonged hospital stays, high treatment costs, treatment failures and high mortality, due to delays in the administration of effective treatment and the limited availability of treatment options. The challenge of the next few years will be the race between the creation of effective novel molecules and the spread of carbapenemases worldwide.

Material and methods. Here, in this paper we revised current research materials published in online medical databases as Medline (PubMed) and Scopus, the websites of the WHO, CDC and focuses on bacterial resistance to carbapenems, discusses the mechanisms by which this occurs and prevention measures.

Results. AMR has become a major source of concern for public health and infections caused by CPE are difficult to treat. CPE represent the most serious threat, challenge of contemporary medicine because of the number of different resistance mechanisms, concomitant resistance to all alternative antimicrobials, high mortality and the ability to spread rapidly across worldwide. A major reason for the rapid spread of AMR through bacterial populations is that genes conferring resistance are carried on plasmids or on other highly movable genetic elements that are independently replicated and passed between bacterial cells and species.

The resistance of clinically isolated CRE may result either from expression of carbapenemases or by combined effects of b-lactamases with no intrinsic carbapenemase activity and decreased outer membrane permeability.

The most clinically relevant carbapenemases encountered in *Enterobacteriaceae* belong to either Ambler class A (KPC-type), or Ambler class B (metallo-beta-lactamases (MBLs) such as IMP-, VIM- and NDM-types) or Ambler Class D (OXA-48-like enzymes).

A precise identification of carbapenemase production and type is important for the follow up of the spread of carbapenemase producers the timely identification of outbreaks and their prevention and the choice of treatment.

The majority of analyzed studies indicate that stronger hygiene and infection prevention measures, hand hygiene, appropriate aseptic technique, consistent maintenance of clean, hygienic medical facilities, equipment and practices along with surveillance, monitoring and evaluation measures can limit the spread of CPE.

Conclusions. The emergence of carbapenem-resistant Enterobacteriaceae has become a substantial global health problem. This review highlighted that in *Enterobacteriaceae*, carbapenemases represent the most important mechanism of resistance, since the carbapenemase genes are mostly plasmid-encoded, associated with multi- or pan-drug resistance and are highly transferable, at least within the enterobacterial species, making them potentially responsible for outbreaks.

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FACTORS AFFECTING TREATMENT COMPLIANCE OF PATIENTS WITH MULTIMORBIDITY

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Keywords: *multimorbidity, treatment adherence, compliance.*

Introduction. Multimorbidity is a global health challenge, and it's commonly defined as the coexistence of 2 or more chronic diseases in the same individual. Roughly 50 million people in Europe suffer from multimorbidity across all ages and backgrounds. The management of multimorbid patient is complex and it is influenced by different factors. The compliance to treatment seems to affect the outcomes of multimorbid patients, but the data in this regard are controversial.
The purpose of this research was to investigate the factors that affect compliance in multimorbidity, in order to improve the management of these patients and boost health outcomes.

Material and methods. A search strategy was developed, and PubMed database was searched for literature from January 2016 to December 2020, as well as search of reference lists for systemic reviews and meta-analyses and Cochrane guidelines. Information about publication date, subject category, author, country origin, title, abstract, and keywords were extracted, and the full texts were obtained for co-citation analysis. In total, 74 relevant studies and articles were used.

Results. Compliance is a multidimensional phenomenon, and it refers to the extent to which a patient's behavior aligns with agreed recommendations from healthcare providers. Multimorbidity is associated with multiple significant implications: whether physical, psychological, socioeconomic, and treatment challenges that ensue. Non-compliance to prescribed treatment in multimorbid patients is determined by patient's beliefs about treatment, their knowledge about illness, socioeconomic status, level of treatment burden, and barriers such as costs or inadequate healthcare access. Five sets of compliance determinants are recognized: patient-related (includes beliefs, self-efficacy, and knowledge about illness); socioeconomic status (poor socioeconomic status, unemployment, lack of effective social support, unstable living conditions, and treatment burdens such as medication costs); therapy-related (most notable is complexity of medical regimen, duration of treatment, side effects, and medical support availability to deal with them); health system-related (represent issues due to poor communication); condition-related (represent the illness-related demands faced by the patient including number of conditions, severity of symptoms, level of disability, rate of progression and severity of disease, as well as the availability of effective treatments). Based on revived research, in order to increase the compliance in patients with multimorbidity, were applied different strategies: improvement of the coordination of medical services, promotion of integrated patient-centered care to optimize therapeutic regimens, increase treatment knowledge, and engagement of the patient in treatment decisions.

Conclusions. Multimorbidity is associated with poorer medication adherence, and generates multiple challenges related to the complex healthcare needs, multiple consultations, fragmented healthcare services, polypharmacy, increased treatment burden and costs. The relevant factors affecting compliance in multimorbidity were patient-related, socioeconomic-related, therapy-related, health system-related, and condition-related. In order to increase the compliance, we can use patient centered care, empowerment of the patient and better coordination of care.

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MEDICAL AND SOCIAL ASPECTS OF ARTERIAL HYPERTENSION

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Keywords: *high blood pressure, prevention.*

Introduction. High blood pressure is considered the disease of the 21st century. Significant progress has been made in understanding the epidemiology, pathophysiology and risks associated with hypertension, lifestyle strategies have been implemented, drug therapies have been optimized. Nonetheless, blood pressure control rates remain low at global, European and national levels. Consequently, arterial hypertension, although preventable, remains the main cause of cardiovascular disease, general morbidity and premature mortality.

Prevention of cardiovascular diseases in adults is based on prevention of risk factors. There are three leading strategies for the prevention of cardiovascular diseases: general population prevention, prevention in people at high risk and secondary prevention. All three strategies are necessary and complementary. Correct identification of risks will allow adequate and timely measures for primary, secondary and tertiary prophylaxis.

Aim of the study: estimation of the prevalence of key hypertension risk factors in adult population of the Republic of Moldova and identification and assessment of knowledge gaps.

Material and methods. This is a descriptive science paper. Primary data collected by qualitative, semi-structured questionnaire. Sample – 396 adults. Sample selection – random. Other sources used: national and international scientific articles, and statistics provided by the National Bureau of Statistics of the Republic of Moldova.

Results. The results of the study show that the most important risk factors are obesity – 41%, and stress - 65%. These 2 factors were also most frequently identified by respondents as factors leading to high blood pressure. 95.2% of respondents had measured their blood pressure at least once in their lifetime. Only 10% of individuals surveyed were diagnosed with high blood pressure, this is due to a large number of undiagnosed people. A WHO survey, in 2014, shows that 43.3% of hypertensive people are undiagnosed It is alarming that 24.7% of deaths caused by fatal complications occur at productive ages. These trends can potentially have significant negative consequences on the public health in the Republic of Moldova. The study determined that 89% of respondents would like to know more information about arterial hypertension and 47% are interested in learning about prevention and prophylaxis.

Conclusions. Most importantly, it is propagated by obesity and stress - two factors that can be prevented. This study identified that there is a need for increased information on the causes, prevention and prophylaxis of arterial hypertension. This study also suggests increasing awareness of individuals and promoting the monitoring of blood pressure at home as the basis for an early identification all types of hypertension. High blood pressure affects all age groups. Females are less represented in clinical trials, nonetheless, high blood pressure is an important fetal and maternal risk factor. Therefore, intervention plans must be individualized to include biological age, individual functions, mental and social health status.

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RISK ASSESSMENT OF HEALTHCARE WORKERS'ACTIVITY

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Keywords: *risk factors, healthcare workers, working conditions.*

Introduction. Over the last 15 years, the occupational mortality rate has considerably increased among health care workers from the Republic of Moldova. The major risk factors determining the morbidity and mortality rates among medical staff include physical, chemical, biological and psycho-social factors. The most common occupational diseases occurring among healthcare providers are due to non-compliance to occupational safety and hygiene guidelines, personal hygiene, sanitary- epidemiological regulations, violation of protection norms and inadequate endowment of sanitary and social rooms, as well as of individual protective means. Workplace stress is a universal issue, the most common being the occupational burnout syndrome, characterized by physical, mental and emotional exhaustion.

Material and methods. The research was conducted on 75 medical workers during the years 2020-2021, 80% of which were women and 20% - men. 80% of the studied people were aged between 20-30 years old. To assess the risk factors, a questionnaire was developed, which included 26 questions divided into several compartments.

Results. 51 nurses, 13 paramedics, 8 doctors and 3 auxiliary medical staff were surveyed. 91% of participants claimed that their job is associated with health risks, whereas 9% respondents disagreed upon that statement. At workplace, the medical staff complained of fatigue in 86.7% of cases, stress – 65.3%, anxiety – 26.7%, and discomfort – 17.3%. The most commonly encountered physical factors were reported to be the noise – 56%, unfavorable microclimate – 52%, inadequate lighting – 41.3%, vibrations – 25.3%, ionizing radiation – 12%, non-ionizing radiation - 5.3% and 12% respondents denied any physical factors. The most common chemical factors were as following: disinfectants – 89.3%, antiseptics – 80%, drugs – 65.3%, latex – 50.7%, laboratory reagents – 8%, anesthetic gases – 8% and 6.7% denied the presence of any chemical factors. The reported biological factors included viruses – 77.3%, bacteria – 73.3%, antibiotics – 42.7%, fungi – 41.3%, parasites - 40%, vaccines and serum – 17, 3%, whereas 9.3% encountered no chemical factors at their workplace.

The psychosocial factors were most frequently reported at workplace, being as follows: overtime work – 74.7%, talking to patients - 54.7%, employer-employee relationship – 44%, collegial relationship – 38.7% and 6.7% did not encounter such problems. The commonest workplace challenges were as follows: poor body posture - 62.7%, weight-lifting or patient transporting – 48%, long-lasting orthostatic position – 34.7%, long-lasting sitting position - 18.7%, and 8% did not claim any of such problems. The overall health condition of the respondents after a day of work was assessed as satisfactory – 57.3%, unsatisfactory – 22.7%, good – 16%, very good – in only 4% of participants. Working conditions were considered as satisfactory and affecting the work capacity and health in 78.7% of cases, unfavorable or life-threatening -13.3%, favorable or not affecting the work capacity and well-being in – 8% of respondents.

Conclusions. The healthcare workers activity is accompanied by the presence of certain risk factors, which might lead to the development of occupational diseases.

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A COMPARATIVE CLINICAL PICTURE OF DEMENTIA

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Keywords: *dementia, risk factors, protection factors, pathogenesis, depression, delirium.*

Introduction. The prevalence of dementia is increasing in our population, which is aging at an alarm-ing rate. Due to the heterogeneity of the clinical presentation and the complexity of the neuropathology of the disease, the classifications of dementia remain controversial, and the number of people diagnosed does not correspond, even remotely, with reality. About 47 million people live with dementia globally; by 2050, there will be an almost threefold increase to about 131 million people with dementia. Also, the costs for the diagnosis, treatment and post-treatment surveillance of dementia for the health system and the economy are significant. The clinical picture of dementia is quite diverse. Therefore, it is necessary to learn how to relate its different symptoms and syndromes, characteristics and specificity in different nosologies.

Material and methods. The present work studied 42 materials and literature sources from the Medscape, PubMed and EBSCO databases in terms of clinical manifestations, symptoms and syndromes of dementia (2013-2021). Most of the used literature sources refer to the last years of publication (2016-2021). The methods of study were as follows: 1. The clinical-descriptive method of the main symptoms, syndromes, 2. The comparative-clinical analysis of the symptoms of dementia, 3. The specific clinical features, 4. The differential diagnosis between different types of dementia, 5. The 4 most common dementia types, 6. Dementia in different nosologies, 7. The most common conditions viz. depression and delirium, should be differentiated from dementia in the first place. Major attention was paid to the comparative characteristics and clinical manifestations of different types of dementia in various pathologies, to the point of specific features of dementia. A comparative clinical picture of deep cognitive changes and development was studied according to the REIBERG scale for dementia. There were applied current classifications of dementia: DSM-V, ICD-X, ICD-11. The scientific novelty of the work is provided by the use of ICD-11 in the description of the criteria for the diagnosis of dementia.

Results. The paper lists the risk factors, protection factors and pathogenesis of dementia. The study results provided a generalization of specific symptoms and syndromes in the most common 4 types of dementia: 1. Dementia in Alzheimer's Disease, 2. Lewy Body Dementia, 3. Vascular Dementia, 4. Frontotemporal Dementia, as well as dementia occurring in other nosologies. Comparative differential criteria for the diagnosis of dementia and other underlying conditions which are difficult to differentiate from dementia viz. depression and delirium were also studied.

Conclusions. Failure to recognize dementia syndromes remains common. Different types of dementia require different approaches and management. From a long list of differential diagnoses of dementia, four common types should come to mind (Alzheimer's disease, vascular dementia, Lewy body dementia and frontotemporal dementia) just by taking patient's family history, physical examination and checking the patient's behavioral status. Dementia should be differentiated from the most common conditions like depression and delirium by nosology, clinical presentation, prevailing symptoms and syndromes.

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THE RELATIONSHIP BETWEEN HEALTH AND CLIMATE CHANGE

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Keywords: *climate change, high temperatures, health.*

Introduction. Climate change is a change in the statistical distribution of weather patterns when it takes an extended period of time (i.e. from decades to millions of years). The Earth's climate system response might be rapid (e.g., a sudden cooling due to volcanic ash in the atmosphere by reflecting sunlight), slow (e.g., thermal expansion of warm ocean waters), or a combined response (e.g., sudden decrease of ice albedo in the Arctic Ocean, followed by more gradual thermal expansion of the water). The life quality in the population is largely conditioned by the environmental conditions which provide an optimal ecological balance between local, regional and global levels.

Material and methods. The present study was aimed to perform a literature review related to healthcare issues, climate change, as well as global warming. Data issued by WHO were analysed, as well as other relevant scientific studies. The bibliographic list accounted for 47 sources (articles, reports, monographs, and PhD theses), published in the Republic of Moldova, Romania, Ukraine, Russian Federation, Bulgaria, Portugal, France, USA, and Great Britain.

Results. As a result of literature review it became clear that climate change will inevitably affect the essential components in maintaining a healthy living environment, such as air and clean water and adequate food and shelter. There is a threat that higher temperatures and climate variability will raise the level of air pollutants, increase the incidence of disease transmission through contaminated water and food, endanger agricultural production in less developed countries and increase the possibility of extreme weather events.

Any climate change triggers some new challenges in the fight against infectious diseases, some of which are extremely sensitive to climate (such as extreme temperatures and rainfall), including cholera, diarrheal diseases, malaria, Dengue fever and other vector-borne infections. The effects of climate change are already visible in some countries.

Global warming has a significant impact on specific areas such as the health sector by increasing the incidence of infectious and parasitic diseases, as well as diarrheal diseases that spread through contaminated waters, thus increasing the mortality and morbidity rate among people with cardiovascular diseases, particularly due to an increase in temperature; the agricultural sector is also extremely susceptible to climate change. Global temperatures associated with increases in drought frequency will soon lead to malnutrition being the most acute problem in countries with large populations. The increase in temperature decreases the level of rainfall per year, which in turn leads to lowering of water, thus decreasing the dilution of wastewater and an increase in the number of infectious agents.

Conclusions. The extreme temperatures represent a health hazard. It has led to new healthcare challenges related to infectious disease control. To prevent these consequences, people should provide environmental protection against such pollutants as greenhouse gases. The environmental risk factors should be thoroughly considered by public health services. The government needs to give higher priority to PHC services, as well as provide a substantial health-related spending to patients' needs, particularly of vulnerable groups who might be affected by global warming.

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MENTAL HEALTH DURING THE COVID-19 QUARANTINE IN FIVE COUNTRIES

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Keywords: *mental health, COVID-19, quarantine, pandemic high blood pressure, prevention.*

Introduction. In the current COVID-19 pandemic governments and health entities urgently responded to the biological threat developing diagnostic tests, treatments, vaccines, additionally the economic concerns were approached, however there is little effort directed to the mental health, which is part of the holistic concept of health, and from where interventions for the prevention of contagion and coping with the disease and its consequences can be focused. The present study sought to describe, compare, and analyze the association of the perceived stress, coping strategies, emotional regulation, hopelessness, impact of the event, psychological distress, suicidality, as components of mental health, and sociodemographic characteristics during the quarantine in various countries in Europe and Latin America.

Material and methods. Multicentric and epidemiological study approved by the Ethics Committee of the Universidad Cooperativa de Colombia. Convenience online snowball sampling of general population and university students. The questionnaire contained the informed consent, sociodemographic data, and the Impact of Event Scale-Revised, Perceived Stress Scale, Coping Orientations to Problems Experienced, Emotion Regulation Questionnaire, Symptom Check-List-90 Revised, Beck's Hopelessness Scale, and Okasha Suicidality Scale. Data were collected between April and June 2020.

Statistical analysis: Internal consistency of scales was estimated by Cronbach's alpha. Normality of distribution was assessed by Kolmogorov-Smirnov tests. Univariate (Kruskal-Wallis test, Spearman correlation) and multivariate analyses (Generalized Linear Models) were performed using STATA 16.

Results. 1.179 participants (27.48% male) aged between 15 to 76 years (M=33.52, SD=13.4) from Colombia (N=356), Brazil (N=364), Mexico (N=202), Italy (N=166), and Spain (N=91). The majority are students and workers, whit high level of education, and living with family during the quarantine. There are significant differences in the medians of all variables among countries and sociodemographic characteristics showing greater psychological affectation in young people, students, women, and inhabitants of Brazil, Italy and Spain. Most variables correlate with each other in a statistically significant way as theoretically expected.

Conclusions. Due to the complexity of the pandemic, there are differences in terms of contagion containment measures, restrictions, laws and sanctions, government and health authorities' management, type of information disseminated by media, resources available for diagnoses, treatments and aid, number of infections and deaths, job and economic losses, that significantly affect the impact in mental health worldwide. The results of the present research contribute to the understanding of mental, emotional and behavioral reactions of people across different countries and according to sociodemographic characteristics and underline the urgency of monitoring mental health in vulnerable groups, in order to design specific prevention and intervention programs.

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EPIDEMIOLOGICAL PARTICULARS OF FAMILY FOCUSES WITH COVID-19

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Keywords: *COVID-19 infection, children, family outbreaks, sources of infection.*

Introduction. An outbreak of the coronavirus disease 2019 (COVID-19) is spreading rapidly around the world, which is caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection. The population of all ages is susceptible to SARS-CoV-2 virus. The Johns Hopkins Bloomberg School of Public Health study group showed that children are at similar risk to infection as adults, but that they have fewer symptoms. The role of children in the transmission of SARS-CoV-2 and their susceptibility to mild or asymptomatic infections has been the subject of intense debate. However, it is important to determine the role of the child in maintaining and intensifying of COVID-19 cases. Data from China had showed that most children with COVID-19 were associated with family clusters, where strict social distancing measures have been implemented and 77% of pediatric cases had household exposure. While another data from other studies, such as the Netherlands, suggest that SARS-CoV-2 is spread mainly among adults and from adult family members to children. But emerging evidence suggests children are at greater risk of COVID-19 infection than initially predicted.

Material and methods. The determination of the epidemiological peculiarities of the family outbreaks with COVID-19, depending on the children age, the onset of the disease, the living environment, belonging to communities was performed based on a descriptive study. The research group of 160 family outbreaks, which required hospitalization in Municipal Clinical Hospital of Contagious Diseases for Children, during January - February 2021, were included.

Results. The number of family outbreaks has increased in January (n=72) vs. February (n= 88). The rate of outbreaks involving school-age children increased from 37.5% in January to 53.4% in February. The onset of the disease in family outbreaks varies depending on the age group of the children. In outbreaks with children aged 0-6 years initially make parents ill in 40.7%, or concomitant onset in 32.55% of cases and 32.55% of outbreaks the onset of the disease occurs in children. In school-age children's outbreaks, the child is the first who manifest the disease 51.35%, outbreaks with the onset of the disease in parents 41.9%, or concomitant onset 6.75% of cases. It follows a trend of increasing the share of outbreaks in which children are the primary sources of infection, increasing outbreaks from rural areas (from 18.1% to 22.73%), and outbreaks involving organized children (from 43% to 62.5%) which indicates a much higher risk transmission of Covid-19 infection in children's communities.

Conclusions. Therefore, children are sources of infection in COVID-19, being responsible for family outbreaks, in about a third of the cases they were the first to show the disease, especially school-age children. Determining the epidemiological features in family outbreaks represent one of the important conditions in developing strategies for action and response to COVID-19 infection in the community.

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ON THE DEVELOPMENT OF A METHODOLOGY FOR STUDYING THE SYNERGIC EFFECT OF RADON AND SMOKING ON THE OCCURRENCE OF LUNG CANCER

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Keywords: *radon, smoking, synergism, lung cancer, methodology.*

Introduction. Lung cancer is currently the leading cause of cancer-related death worldwide and tobacco smoking is the most important risk factor for its occurrence. Recent research suggests that lung cancer in never-smokers could be a different disease than lung cancer in smokers, since different molecular pathways are present in never-smokers' lung cancer. Residential radon exposure is the second risk factor of lung cancer after tobacco smoking and the first risk factor for never-smokers. The problem of assessing the relationship between residential radon and lung cancer is the low variability in radon concentrations, as well as its weak linear relationship with smoking, hence being difficult to estimate possible dose–response patterns. Some studies, performed in Europe and North America, include risk communication/questionnaire and case–control studies on that issue. A review and a synthetic analysis of specialized literature served as the basis for a methodology design aimed to study the synergism of radon and smoking in the occurrence of lung cancer in the Republic of Moldova.

Material and methods. The study of the international experience on the methodology of the synergism between radon and smoking was carried out by searching 30 different current publications, published over the last 10 years on ResearchGate, Pubmed, BioMedCentral, RSCI, European Commission Webgate, WHO publications, etc. A descriptive synthesis of current approaches to the development and implementation of research methods for the synergistic impact of radon and smoking on lung cancer was performed.

Results. To date, a few research have focused on the study of the effect of synergistic exposure to smoke and radon on lung cancer incidence. A review of the specialized literature showed that the main methods for studying this phenomenon are case-control studies and sociological methods by raising public awareness, free testing and subsequent interviewing the risk groups. A combination of the approaches based on the successful experience of Spanish researchers, allowed to develop a questionnaire for the case-control study of patients with lung cancer. It includes 15 questions (related to sociodemographic, shelter, smoking, measuring radon, and diagnosis issues), hence suggesting being used within a long-term study along with the Institute of Oncology, followed by the subsequent database creation and the statistical processing of the obtained materials. The reliable statistical data on the relationship of the synergism of exposure to radon and smoking will allow to quantify and qualify the combination of these risk factors for the lung cancer incidence across our country.

Conclusions. The methodological approach designed to study the synergism of radon and smoking on the lung cancer incidence, based on the international experience and its application in Moldova will contribute significantly to this little-studied research area, as well as allow the public health system to develop the appropriate preventive means. There is a need to provide strategic guidance on what the synergistic approach to radon and tobacco control entails.

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THE EFFECT OF COMMUNICATION IN CHANGING HEALTH-RISK BEHAVIORS

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Keywords: *communication, health-risk, behavior change.*

Introduction. Human behavior plays a central role in the maintenance of health and the prevention of disease. Effective communication is neglected in the local health system but successfully used in countries with a lower disease rate and with an advanced healthy lifestyle. This action can encourage and serve as a model for changing harmful behavior and habits that are not always fully notified by the population.

Health communication attempts to persuade the affected group to engage in certain behavior through accessing information. Intervention measures in changing the behaviors in the affected group are an area of concern and must be fully supported by both the government and non-governmental organizations. However, society-wide change is slow.

Majority of health communication researchers insist on behavior change programs that aim to increase knowledge, stimulate dialogue, promote attitude change, reduce stigma, and improve skills. Success of communication is determined by a variety of factors that may include: how good is the access of the target group to information, whether the target group has acquired sufficient knowledge and skills to perform the behavior among others.

Material and methods. A cross-sectional epidemiological research was carried out by using the descriptive method. The study involved the general population from the Republic of Moldova aged over 18.

The research was conducted during March-April, 2020 with the informed online consent from respondents. Participation in this study was absolutely voluntary. The questionnaire included 30 questions. The study involved 1076 people with the age ranged between 26-34 years.

Results. Most participants reported that their health depends on nutrition, for about 95.4%, physical activity – 80.4%, routine medical checkup – 47.8% and the avoiding of risk factors (alcohol, smoking) – 35.9%. Also, they tend to quit smoking under the influence of messages on tobacco products – 4.7%. The population is informed about the influence of health risk factors on the Internet and social networks for about 87.7%, through TV programs – 38.9% and by the GPs – 12.2%. 83.5% of the interviewed population mentioned that they are ready to change their behavior when a message is broadcast with positive content. Messages with practical examples could influence the change in health behavior for about 23.4% of respondents. Almost half of the interviewed population (42.3%) believe that the population would change their behavior through health promotion programs, 22.7% of interviewees think that there are changes in population behavior, but only for a short-term, and 21.7% of them answered that the population is rarely determined to change their behavior through health promotion programs.

Conclusions. Effective communication for changing health risk behavior in the media has some shortcomings, although the population is motivated to switch some bad habits as a result of broadcasting several programs and messages in health promotion.

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CORRELATION BETWEEN ECHOCARDIOGRAPHIC PARAMETERS OF LEFT VENTRICULAR AND GLYCOSYLATED HEMOGLOBIN IN CHILDREN WITH TYPE 1 DIABETES MELLITUS

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Keywords: *children, Diabetes Mellitus, left ventricle.*

Introduction. Deterioration of left ventricular (LV) parameters in diabetes Mellitus (DM) can exist in the absence of other combined cardiac problems. An association between glycosylated hemoglobin (HbA1c) and changes of the LV parameters in DM has been reported. However, data regarding this association model in children with type 1 DM (T1DM) are limited.

The purpose of the work. To investigate the association between HbA1c and the LV parameters in pediatric patients with T1DM.

Material and methods. We studied 28 children with T1DM ((aged 10-18 years, gender M (15) / F (13)). All patients were diagnosed with T1DM (duration of T1D≥5 years) and received insulin therapy only. We analyzed the clinical (standard medical examination) and paraclinical (biochemical dosage – HbA1c, echocardiography - LV functional and structural parameters) data. The research received a favorable opinion of the Research Ethics Committee of the "Nicolae Testemitanu" SUMPh. Statistical analysis – SPSS version 20.

Results. The mean±SD for age of the patients was 13.7±2.35 years, weight (kg)=53.0±17.0, height (cm)=157.2±36.7, body mass index (kg/m^2)=19.0±4.5, systolic blood pressure (mm Hg)=115.7±12.3, diastolic blood pressure (mm Hg)=75.2±8.7, HbA1c (%)=9.2±2.4, aortic root diameter (mm)=24.5±6.0, left atrium (mm)=26.8±6.2, right atrium^{1,2} (mm)=29.0±7.3/30.1±7.2, right ventricle (mm)=15.1±4.0 , LV diastolic diameter (mm)=41.3±9.6, LV systolic diameter (mm)=25.4±5.9, septal wall thickness (mm)=7.5±1.9, posterior wall thickness (mm)=7.4±1.8, LV diastolic volume (ml)=81.9±24.6, LV systolic volume (ml)=25.2±7.7, ejection fraction (%)=65.7±14.8, fractional shortening (%)=36.7±8.4.

Duration of T1DM (years)=6.51±3.2. The correlational study between the HbA1c and the LV parameters revealed a statistically significant positive correlation coefficient with height (cm) (r=0.7**, p<0.001), weight (kg) (r=0.5*, p<0.5), body mass index (kg/m^2) (r=0.5*, p<0.5), systolic blood pressure and diastolic blood pressure (mm Hg) (r=0.3*, p<0.5), aortic root diameter (mm) (r=0.7**, p<0.001), left atrium (mm) (r=0.8**, p<0.001) right atrium^{1,2} (mm) (r=0.6**, p=0.003), right ventricle (mm) (r=0.6**, p=0.003), LV diastolic diameter (mm) (r=0.7**, p<0.001), LV systolic diameter (mm) (r=0.7**, p<0.001), septal wall thickness (mm) (r=0.5*, p=0.036), posterior wall thickness (mm) (r=0.5*, p=0.032), LV diastolic volume (ml) (r=0.5*, p=0.025), LV systolic volume (ml) (r=0.6**, p=0.01), ejection fraction (%) (r=0.7**, p=0.001), fractional shortening (%) (r=0.6**, p=0.002).

Conclusions. The results of the study show that in children with type 1 Diabetes Mellitus, the increase value of the HbA1c is associated with a consensual and proportional increase in the values of the parameters of the left ventricle. Periodic cardiac evaluation with both conventional and tissue Doppler echocardiography is recommended for early detection of the modifications of left ventricular parameters, depending on the value of glycosylated hemoglobin, and initiation of the treatment (or prevention), if necessary.

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RISK FACTORS IMPACTING PEDESTRIAN SAFETY

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Keywords: *safety, pedestrians, risk factors, vulnerable, attention.*

Introduction. Pedestrians are known as the most vulnerable road users, which means their needs and safety require specific attention in strategic plans. Given the fact that pedestrians are more prone to higher injury severity levels compared to other road users, this study aims to investigate the risk factors that impact their safety. Data from the World Health Organization confirms that road crashes do indeed take a serious toll on pedestrians. In 2013, more than 270,000 pedestrians lost their lives globally, representing almost 1/5 of the total number of deaths.

Material and methods. This study analyzed the major aspects of this topic, published in the last 10 years. The study is based on 47 literature sources of foreign authors (Romania, Russia, USA, Germany, Spain, etc.).

Results. The key risk factors impacting the safety of pedestrians are: speed, alcohol, lack of adequate pedestrian facilities, non-compliance to road traffic regulations, distracted driving affected by mobile phone or headphones use, poor visibility due to inadequate street lighting, vehicle headlights that do not work well, and driver's fatigue.

First of all, speed is the main cause of road accidents among pedestrians. The higher the speed is, the higher is the probability to suffer serious or fatal injuries. At 30 km/h, the probability of survival is 90%, while at 60 km/h, it is 25%. Similarly, it can reduce drivers' peripheral vision, increase the distance needed to stop completely, and de crease the available reaction time.

Secondly, drunkenness is considered especially dangerous when the driver is the one who's intoxicated, as alcohol undermines their decision-making capacity, makes their reflexes slower, shortens their attention span, and affects visual acuity – all of which are essential to safe driving. Thirdly, and the most important are adequate pedestrian facilities. These conditions are particularly critical on arterial roads and at intersections, where the risk for pedestrians increases. Urban development with long blocks that allow cars to reach high speeds and insufficient safe pedestrian crossings also contribute to higher risk.

Some of the most common pedestrian accident injuries are: soft tissue damage, broken bones and bone fractures, traumatic brain injuries and spinal cord injuries. Worldwide, road traffic injuries are a leading cause of death with more than 1.3 million fatalities each year (WHO, 2018).

Conclusions. Lack of speed control and alcohol are statistically important predictors of trauma and death among pedestrians worldwide. Nowadays with the urbanization and spread of roadways the incidence of accidents involving pedestrians has increased significantly and their safety began to be threatened by the above mentioned factors. Safe environments should address spatial equality for pedestrians relative to other modes of transport.

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CRYOBALLOON ABLATION OF ATRIAL FIBRILLATION IN REPUBLIC OF MOLDOVA. THREE YEARS OF EXPERIENCE

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Keywords: *ablation, atrial fibrillation, cryoballoon, pulmonary vein isolation.*

Introduction. Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia in adults with currently estimated prevalence between 2% and 4%. AF is associated with significant morbidity and mortality having important impact to both patient's quality of life and health economy. In the last years a lot of research efforts and resources are being directed towards gaining detailed information about the mechanisms underlying AF, its natural course and effective treatments. New evidence is continuously generated and published.

The complexity of AF requires a multidisciplinary approach to the management of AF patients with their active involvement in partnership with clinicians. In recent years, substantial progress has been made in the detection of AF and its management. The procedure of pulmonary vein isolation is an established therapy for symptomatic atrial fibrillation. The second generation cryoballoon is one of the effective methods in achieving pulmonary vein isolation. In 2018 cryoballoon ablation (CBA) was implemented in Republic of Moldova and is regularly performed in Medpark International Hospital in the last three years. The aim of the study was to assess the freedom from AF recurrence after CBA.

Material and methods. A retrospective study was performed in 13 consecutive patients who underwent CBA using Arctic Front Advance cryoballoon (Medtronic) for paroxysmal or persistent AF from June 2018 till December 2020 in Medpark International Hospital. We followed up the patients from June 2018 till April 2021. The information about the clinical symptoms and ECG data during follow-up was collected to identify the presence of recurrence. A recurrence after CBA was considered AF episode present after 3-month blanking period and that lasted at least 30 seconds. Continuous variables are presented as mean ± SD. Kaplan–Meier analysis was used to determine the probability of freedom from AF during follow-up.

Results. A total number of 13 patients with a mean age of 62.85±6.58 years with paroxysmal (n=12; 92.3%) or persistent (n=1; 7.7%) AF were identified. There were 10 males (76.9%) and 3 females (23.1%). All patients had a successful pulmonary vein isolation procedure with 100% of veins isolated. No patient had complication during procedure as phrenic nerve palsy, stroke or pericardial effusion. After a 3-month blanking period during a mean follow-up of 369.5±289 days there were 4 (30.77%) AF recurrences. The average days before recurrence was 119.75±33.22 (150, 147, 91 and 91). Freedom from AF recurrence was 69.23% at 30.8±24.1 months follow-up).

Conclusions. The second generation cryoballoon ablation is an effective method of treatment for atrial fibrillation. Our results are compatible with the success rate that is reported by majority of the studies.

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DIETARY SUPPLEMENT USE IN FIGHTING COVID-19 INFECTION

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Keywords: *dietary supplements, effect, dose, COVID-19.*

Introduction. Since the outbreak of the SARS-CoV-2 pandemic in 2020, the emphasis has been on the benefits of some dietary supplements (DS) such as vitamins and minerals supplements to prevent and treat COVID-19. At present, there is no effective antiviral therapy confirmed and symptomatic supportive intervention is still the main prevention in complications. There has been a previous suggestion that there is a role for some dietary supplementation to prevent the severity of the COVID-19 and to enhance the immune system.

An optimal functioning of the immune system is closely linked to an adequate supply of micro and macronutrients to the body, while severe deficiencies of these, may lead to weakened immune responses and vulnerability to diseases. In the last period, there has been a significant increase in sales of DS such as vitamin C, D, Omega-3, Zinc etc. Given that there is currently no specific treatment for coronavirus infection, the administration of DS may be considered harmless.

Material and methods. A bibliographic review was performed, using bibliographic and literature database platforms such as Medline, PubMed, ClinicalTrials, Google Scholar, as well as the keyword „dietary supplements COVID-19" in identifying the evidence of the potential positive effect and administrated doses of some DS in prevention and treatment of SARS-CoV-2.

Results. According to some available evidence, the intake of 50,000 IU/month of vitamin D, 1 to 2 g/day of vitamin C, and 50 mg/day of zinc supplementation showed positive results in CRP. COVID-19 patients demonstrated zinc deficiency and inhibitory role of zinc in replication of the SARS-CoV virus, while 2,2 g/day (at least recommended) Omega-3 (α-linolenic acid) supplementation improved the levels of several parameters of respiratory and renal function in critically ill patients.

An observational study from UK, USA and Sweden found that DS consumption, such as probiotics, Omega-3, multivitamins and vitamin D has been associated with a lower risk of SARS-CoV-2 infection. The data analysis such as age, sex and weight showed that probiotics, Omega-3, multivitamins and vitamin D provide protection especially in women, regardless of age or weight, however it is not as clearly observed in men.

Conclusions. DS may help maintain a healthy immune system, but it is not known whether specific DS may be associated with a lower risk of infection with the novel coronavirus. The role of vitamins C, D, Omega-3 and Zinc in boosting the immune system against COVID-19 is still being studied.

On the other hand, available studies show that the potential effect on the prevention and treatment of COVID-19 by administering DS could be achieved at high doses, which would otherwise raise questions regarding the reasonableness of the „regular" DS administration for treatment and prevention purposes, taking into account that DS regulations stipulate a daily recommended/maximal dose being in some cases up to 10 times lower to achieve the declared prophylactic or therapeutic effect.

Nevertheless, the role of the physician is essential in administering proper treatment and doses of DS appropriate to the patient's medical condition.

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SALT INTAKE AND SALT REDUCTION IN INDIA

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Keywords: *hypertension, cardiovascular diseases, salt intake, salt reduction, India.*

Introduction. Excess salt consumption is a main determinant of the disease burden ascribed to high blood pressure leading to many serious complications, premature mortality and significant health costs. Based on clear evidence on the link between salt intake, blood pressure and vascular risk, the WHO recommends to implement salt reduction strategies. A 30% lowering in the mean population salt intake by 2025 has been included as one of the targets of the '25 by 25' WHO initiative for the control and prevention of noncommunicable diseases.

Material and methods. Electronic database PubMed was searched for studies reporting on salt intake and salt reduction strategies in India published between 2011 and 2021. Data were retrieved also form the websites of India's official health authorities and WHO. Search was done using keywords and was limited to studies published in English language.

Results. Cardiovascular diseases (CVDs) became the leading cause of disease burden and death in India during the last decades. Overall, CVDs contributed 28.1% of the total death and 14.1% of the total disability-adjusted life-years (DALYs) in India in 2016 compared with 15.2% and 6.9%, respectively, in 1990. Dietary risks (56.4%), including high sodium intake, and related high systolic blood pressure (54.6%) are the two leading and overlapping risk factors contributing to DALYs in 2016. Salt intake is very high across different regions of India with the average daily intake ranging between 9 and 12 grams daily.

The intake is reported to be higher in urban settings compared to rural settings. A recent large study from south India revealed that mean dietary sodium intake was significantly higher in the hypertensive men (4.2±2 g/day) and women (3.2±1.7 g/day) compared with normotensive men (4±2 g/day), and women (3.2±1.7 g/day; $P<0.05$).

Discretionary salt is the main contributor of excess dietary salt. Knowledge, attitudes, and practices of the population regarding optimal salt intake are generally poor. India aims at a 20% and 30% reduction in salt intake by 2020 and 2025 respectively. Population-based strategies on reducing salt consumption need to be effectively implemented given the high prevalence and growing burden of hypertension. India plans to use WHO's Three Pillars of product reformulation, consumer awareness and education campaigns and environmental changes to reduce salt intake in the population.

The proposed advertisement bans on foods high in fat, sugar, and salt by the Food Safety and Standards Authority of India in 2017 is a step towards reducing some of these risks that contribute to the burden of CVDs. India is part of the regional main strategy on public education and behavior change communication regarding salt reduction adopted in 2014 by countries of South-East Asia region. Counseling regarding salt reduction is provided in the primary care settings.

Conclusions. (1) The burden of cardiovascular diseases is increasing in India, with high salt intake as one of the main risk factors. (2) An effective awareness raising, and public education initiative need to be implemented, involving macrolevel factors.

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HUMAN HEALTH INFLUENCED BY GLOBAL WARMING AND MASS-MEDIA COVERAGE

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Keywords: *global warming, media coverage, public health.*

Introduction. Recently, the issue on global warming and its effects on health has been increasingly debated by the mass-media. Global warming is commonly defined as an increase in Earth's average surface temperature.

A crucial role in shaping public opinion and attitude towards this issue is played by the media coverage regarding the climate change. The first long-term studies on the media coverage emerged more than a decade ago, which brought together an international group of researchers. This cooperation was aimed at raising public awareness on the impact of global warming on different life sectors, particularly on human health problems and life effects.

Material and methods. This present research was based on the data analysis of media coverage on health issues related to global warming/climate changes. The study assessed 87 articles that have been published over the last 5 years across Moldova, Romania, Russia, France, Germany, and the United Kingdom.

Results. Climate changes will always persist, thus, people should take advantage and reduce the risks, by increasing the population's awareness on this issue. The way media coverage will inform the population depends on the societies that manage this issue. Climate change will become an increasingly important matter for journalists as to provide further open discussions, as well as access to information for a local response to the global problem.

As climate change / global warming will steadily occur, people will eventually ask for information regarding that, as well as what they or governments should do upon this problem. Smart and open media managers will consider that opportunity to better inform and serve these audiences. The major three traditional roles of the media include: raising public awareness, acting as watchdogs; providing social campaigns; maintaining the vital link between scientists and service providers.

The journalists commonly consider several things in providing mass-media coverage of health affected by global warming. At the local level, it can save lives, develop action plans, change policy and empower people to take right decisions.

Conclusions. Global warming takes one of the decisive roles in shaping the prospects of human development in the 21st century. The informed public understanding of the urgent priority of global warming may create a political space for the government to introduce radical reforms. The media policy should be supplemented by spotlight social messages on TV and Radio formats. A massive public awareness on global warming, its impact on several vulnerable sectors and response measures to adapt to climate change should be carried out by media coverage. Given the effects of climate change and their costs, it can be concluded that mitigation and adaptation would be the best solutions to ensure an ongoing human development.

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POSTOPERATIVE MORBIDITY AFTER RADICAL GASTRIC RESECTIONS

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Keywords: *gastric cancer, lymph-node dissection, gastric resection, early complications, Clavien-Dindo classification, late complications.*

Introduction. Gastric cancer is one of the most common and deadly neoplasms in the world. Although it's incidence is declining, it remains still high (according to GLOBOCAN – 11,1:100000 in 2020), with more that 1 million new cases each year. Gastric cancer kills annually more than 700 000 people, reaching the 5th place in the top of cancer-related deaths. The 5 – year life expectancy is only 28%. Although, early diagnosis is difficult, treatment outcomes are favorable and in early – stage cancer surgery plays a key role. Gastric surgery is technically difficult alone, but in oncology it also must respect several principles, which multiplies the intervention-related risks.

Material and methods. Review type study. Bibliographic search in PubMed and Google Scholar databases, applying the keywords „gastric cancer", „lymph-node dissection", „gastric resection", „early complications", „Clavien-Dindo classification" and „late complications". The full articles published in known journals during the last 5 years as a priority have been selected. Information on gastric resection complication types, diagnosis, classification and treatment was selected and processed, so the final bibliography includes 49 references.

Results. Gastric resections are complicated operations which require specific surgical skills and deep knowledge of anatomy not only regarding abdominal organs, but lymph-node stations also. The early – morbidity rate in gastrectomy varies between 13-38% and depends on patient-related factors – comorbidities, age, sex, nutritional status and surgery-related factors – the extent of lymphadenectomy, the type of gastrointestinal reconstruction, the time of intervention, the volume of hemorrhage and surgeon experience.

The mortality associated to these interventions is also high and varies between 2-8,5%. The late-morbidity rate varies between 5-10% and alter significantly patients' lives, determining nutritional disorders, low BMI, cachexia and psychological stress. Several questionnaires-based studies have shown that gastric resections reduce considerably the respondents' quality of life.

Conclusions. The gastric cancer surgery is marked by high early and late morbidity and mortality, therefore choosing between two borders of extended intervention with great risks and uncertain long-term benefits and limited intervention which doesn't respect the oncological principles might be difficult, so the physician should make a decision which would bring the best benefits and the least risk.

Study of post-operative complications is crucial because they have a major impact on intervention results, on the long-term survival and on the quality of life. We need further studies to assess the cost-benefit analysis of implementing screening programs for risk groups in order to detect early-stage gastric cancer, as treatment outcomes are better, and the intervention-related risks are lower.

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EPIDEMIOLOGICAL AND CLINICAL FEATURES OF ROTAVIRAL INFECTION

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Keywords: *rotaviral infection, gastroenteritis, morbidity.*

Introduction. Rotaviral infection is registered in all geographical areas, being the main cause of dehydration by diarrhea in young children. It is responsible for two-thirds of hospitalizations due to gastroenteritis and is associated with severe evolution in the absence of adequate treatment. The aim of the study is to analyze the multiannual morbidity of rotaviral infection and clinical peculiarities of patients hospitalized with this disease.

Material and methods. This research is a descriptive observational epidemiological study, in which morbidity data of rotaviral infection were analyzed. The following were used as information sources: Form 2 of registration and evidence of diseases for the years 2004-2019 and 33 files of patients diagnosed with rotaviral infection during 2019 year, hospitalized in the infectious hospital for children from mun. Chisinau. The following epidemiological indicators were analyzed: distribution of cases by age groups, gender, living environment, seasonal distribution and severity of the disease which was evaluated by applying the Vesikari Scale.

Results. Analyzing the dynamics of multiannual morbidity through rotaviral infection in the Republic of Moldova and mun. Chisinau during the 2004-2019 years, we found an increase in morbidity since 2008, when in the Republic of Moldova were registered 2.21‰ cases and 10.95‰ in mun. Chişinău. The highest morbidity was registered in 2012 with 19.11‰ cases in the Republic of Moldova and 97.84‰ in mun. Chisinau. The average level of morbidity for the entire period in Chisinau was 27.42‰ cases compared to 6.63‰ cases at the republic level, these data reveal an increased morbidity in urban areas compared to rural areas. Depending on residence, the highest average morbidity was registered in urban areas – 10.52‰ compared to 1.64‰ in rural areas. Rotaviral infection is a disease specific to children, which can be easily observed by analyzing multiannual morbidity, where during the study period the incidence of the disease among children was 37.02‰ compared to 0.08‰ in adults. More frequently, rotaviral infection was registered among children aged 0-2 years – 1.47‰, followed by 3-6 years – 0.39‰ and 7-17 years – 0.02‰. Based on medical records, we found that the highest incidence of rotaviral infection in 2019 was registered in March. The boys aged between 1 and 5 years were most frequently affected, the source of infection in most cases remaining unidentified and the diagnosis being established by the ELISA method. Most of the parents have request medical help on the 2nd - 3rd day of illness, this fact proves that the disease worsens on the 3-4th day from the onset. The average length of hospitalization was 5 days. Analyzing the cases of rotaviral infection according to the Vesikari Scale, we determined that 72.73% were in grade III severity and 27.27% in grade II severity, and in group I severity - no patients. Treatment data showed that therapy is largely based on detoxification and rehydration drugs.

Conclusions. Analyzing the multiannual morbidity of rotaviral infection during the 2004-2019 years, we determined an increase in morbidity, especially starting with 2008 year. The clinical evolution of the registered cases is serious, most of them with the grade III severity according to the Vesikari Scale.

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EPIDEMIOLOGICAL AND CLINICAL FEATURES OF VIRAL HEPATITIS A

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Keywords: *viral hepatitis A, hepatoprotectors, morbidity, jaundice.*

Introduction. Viral hepatitis A (VHA) is an acute, self-limited, caused by the hepatitis A virus which belongs to the genus Hepatovirus. VHA continues to be a widespread infection on all continents, with the highest prevalence in children - 75-80%. In France, the annual morbidity through viral hepatitis A is 1.5‰, in Romania is 20.08‰ and in Russian Federation is 5.46‰. More often, VHA is spread in poor countries and poor hygienic. The aim of the study is to analyze the multiannual morbidity of VHA and clinical peculiarities of patients hospitalized with VHA infection.

Material and methods. This research is a descriptive observational epidemiological study, in which morbidity data of VHA were analyzed. The following were used as information sources: Form 2 of registration and evidence of diseases for the years 2004-2019 and patients diagnosed with VHA during 2016-2020 years, hospitalized in the infectious hospital for children from mun. Chisinau. During this period where hospitalized 40 patients with VHA. The following epidemiological indicators were analyzed: distribution of cases by age groups, gender, living environment, seasonal distribution.

Results. Analyzing the multiannual dynamics morbidity of viral hepatitis A in the Republic of Moldova during the 2004-2019 years, we found a decrease in morbidity from 84.0‰ in 2004 to 2.05‰ in 2019, the multiannual average morbidity being 13.16‰. In mun. Chisinau, during the 2004-2019 years, morbidity had a pronounced decreasing trend from 48.08‰ in 2004 to 0.36‰ 2019, with an average of 6,28‰. Depending on the residence place, we found an increased prevalence of the number of cases in rural areas with an average of 16.77‰, but in urban areas, the average morbidity was 7.62‰, being approximately 2.2 times lower than in rural areas. The average incidence of viral hepatitis A is much higher among children – 51.42‰, compared to 4.66‰ among adults.

Following the study conducted on the basis of medical records, we found that the peak incidence of viral hepatitis during the 2016-2020 years, was recorded in October-December months. Most parents have requested medical help on the 2nd - 5th day of the disease, and average length of stay was 14 days. Most of the children who were diagnosed with viral hepatitis A, attended an educational institution, 26 children (65.0%) attended school and 12 children (30.0%) attended kindergarten. During the 2016-2020 years, there was a predominance of the 7-17 years age group with 27 registered cases (67.5%), followed by the 3-6 years age group with 10 cases (25.0%), and only 3 cases of viral hepatitis A were registered in the 0-2 years age group. Out of 40 patients, 34 developed jaundice, 6 patients - non-jaundice form of the disease. The jaundice form is about 5.6 times more common than the non-jaundiced. The diagnosis of viral hepatitis A was established by ELISA method. The treatment of VHA is mainly symptomatic and has an important detoxifying role, also being used hepatoprotectors and enzymatic drugs.

Conclusions. Over the past year's incidence of hepatitis A is decreasing, with an average morbidity of 13.16‰. The most affected are children aged 7-17 years who attend the school. The most common among hospitalized children is jaundiced form with an average of 14 days of hospitalization.

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EVALUATION OF FAST-FOOD CONSUMPTION BY YOUNG PEOPLE IN CHISINAU MUNICIPALITY, REPUBLIC OF MOLDOVA

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Keywords: *fast food, pupils, students.*

Introduction. In recent decades, as the population has become increasingly busy with various chores, many people have begun to eat fast food. At the same time, a research reveals the negative effects of frequent consumption of such foods, especially preferred by young people. In connection with this, we set ourselves the goal of assessing the preferences of young people in Chisinau, Republic of Moldova.

Material and methods. It was performed a cross-sectional study using the questionnaire. There were interviewed 100 pupils of the Moldovan-French theoretical high school „Gh. Asachi" and 100 students of the State University of Moldova (68 boys and 132 girls) on the consumption of fast-food products, as well as to determine the level of awareness of the impact of these foods on health. Half of the pupils interviewed were between 12-14 years old, and the other half were between 16-19 years old. The students were between 20 and 24 years old.

Results. Out of the total number of respondents, 81% answered that they generally prefer fast food products. At the same time, 48.5% of respondents rarely consumed fast food prepared in specialized units, while 51.5% consumed them with certain regularity. Thus, 5.5% of respondents consumed such foods daily, 8.5% – 2-6 times a week, 8.0% – only once a week, and 29.5% – 1-3 times in the month. The pupils were the ones who used to consume these products more once a week compared to the students, who made up the majority of respondents in the group of those who consume such foods daily and two or more times a week. So, students have proven to be, in general, more faithful consumers. The most frequently consumed products were pizza, being chosen by 72.0% of respondents, followed by fried potatoes, preferred by 60.5% and kebab, the food being chosen by 50.0% of respondents. In descending order after them were preferred: burger, chicken wings and "hot dog". Analyzing the share of fast-food products consumed more often by pupils; it was found that pupils aged 12-14 prefer these products more than those aged 16-19. Students preferred to consume the mentioned foods between 15:00 and 21:00, but pupils - between 12:00 and 18:00. The majority of respondents (60.0%) indicated that the reasons for eating fast food is that they like the taste, but also that they eat with friends or family, 24.5% of respondents consume them for lack of time, 6.5% - because they do not have practical skills in preparing dishes, and 4.5% said that consumption is caused by the fact that they appreciate the variety of these foods. It was revealed, that 26.0% of respondents were not influenced at all by the information in the media about the harmful effect of these foods on the body, while 52% were sometimes influenced, 15% - most of the time and only 7% – of each date. At the same time, 78% of respondents considered fast food in general to be harmful, while 22% consider it beneficial. However, out of the 78% of respondents with negative opinions, only two thirds could name some evil effects.

Conclusions. Fast food products were preferred by most of the young people interviewed. Despite the fact that most respondents have heard about the dangers of eating fast food, a third of them cannot name one.

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RISK FACTORS OF SARS-CoV-2 INFECTION

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Keywords: *SARS-CoV-2, COVID-19, risk factors.*

Introduction. In late 2019 – early 2020, the world was met pandemic caused by the virus, causing Severe Acute Respiratory Syndrome (SARS-CoV-2), an infection also called COVID-19. This is a new coronavirus that was primarily reported to the World Health Organization (WHO) as a group of pneumological symptoms with viral etiology in Wuhan, China, on 31 December 2019. The cause of this disease is coronavirus (COVID - 19), which leads to changes and inflammation in the upper and lower respiratory tract. On 30 Ja nuary 2020, the WHO declared the outbreak of COVID-19 a global public health emergency. Since then, the virus has continued to spread very fast around the world and was described by the WHO as a pandemic on 11 March 2020.

Review is based on a biggest observational population study of all the risk factors of COVID-19 infection. The study was carried out in Royal College of General Practitioners, Oxford, and covering over 4 million of people. Were studied and analyzed risk fa ctors as: age, sex and ethnicity, socioeconomic level, living space dimensions, rural-urban population, body mass index, smoker status, pregnancy, hypertension, chronic kidney disease, ischemic heart disease, chronic respiratory diseases including asthma, and chronic obstructive pulmonary disease, and type 1 and 2 diabetes. Patient variable with malignancy and immunocompromised status was separated due to the small number of patients in each group.

Material and methods. A cross-sectional study of patients in the Network of the Research and Surveillance Centre in Oxford, who were tested for SARS-CoV-2 between 28 January and 4 April 2020, was performed. Pseudonymized results were taken from electronic primary health care records. These data enabled estimating the living space sizes, the isolation level and rural-urban classification. Starting with the end of January 2020, surveillance centers submitted for all patients with symptoms of influenza or respiratory infection – nasopharyngeal smears for SARS-CoV-2 testing.

The following independent demographic aspects were studied as factors: age, sex and ethnicity, using an ontology to help case identification; socioeconomic level (using the English quintile index for multiple deprivation; living space dimensions bas ed on the patient's pseudonymized address; and rural-urban division.

Results. The obtained results showed, for the first time, that only a small part of the substantially higher risks of death from COVID-19 among white groups and among people living in more disadvantaged areas can be attributed to existing disease. Improved strategies for the protection of people of these COVID-19 groups should be analyzed. The causes of a higher risk among non-white groups and disadvantaged areas require further exploration; it is recommended to collect data on occupational exposure and living conditions as first steps. The statistical power of the approach means that associations with less common risk factors can be assessed strongly in more details as soon as possible.

Conclusions. By September 2020 more than 28.000 articles were published related to COVID-19 in less than 9 months. 211 new papers every day. Mostly all of them had small population of the studies. In the investigated sample, it was found that increasing age, male sex, economic deprivation, urban location and black ethnicity were associated with higher chances of testing positive for SARS-CoV-2. Active smoking decreased the chance of a positive test. The review covers the most important subjects influencing the development of severe infection outcomes.

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PARTICULARITIES OF EATING DISORDERS PREVALENCE IN ADOLESCENTS

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Keywords: *eating disorders, adolescents nutrition.*

Introduction. Eating disorders are an important medical and social problem, remarkable potential for chronicity and onset in most cases at a young age. Causes of apparition of eating disorders are genetic factors, psychiatric disorders, anxiety disorders, society and professional goals. Eating disorders considerably impair physical health and disturb the homeostasis of body and systems. These irreversible changes in diet lead to physical, emotional and social consequences. The treatment of these food problems is difficult, complex and requires joint efforts.

Material and methods. The search strategy was developed in the PubMed database, between October 2020 and April 2021. Search key words such as "eating disorders", "adolescents" were used. The filter for the date of publication has been set for the last 10 years. In total, 1265 accessible articles were researched, of which 93 Meta-Analysis, 21 Randomized Controlled Trial and 37 Systematic review were relevant. Most publications come from highly developed countries.

Results. Adolescents are often exposed to harmful products such as tobacco, alcohol and drugs, face higher risks of violence and injuries from road traffic than in childhood, and may experience devastating mental health problems such as depression, anxiety, self-harm, substance abuse and video game addiction, as well as eating disorders and suicide. The most common eating disorders were: anorexia nervosa, bulimia nervosa and binge-eating. In USA, 18% of adolescents at the age of 16 already have at least one episode of eating disorder, Austria has the highest rate of prevalence of eating disorders in Europe at 1.55%. In Italy prevalence for anorexia nervosa of adolescents was 0.42%, for bulimia nervosa – 0.32% and for binge eating syndrome – 0.32%. Food avoidance is seen in almost 97% of children with restricted eating disorders, food preoccupation in over 80% and an extreme fear of "gaining weight" in over 70%. Bulimia nervosa affects both sexes and the average age of onset is about 12-14 years.

The prevalence of bulimia nervosa is 0.9% among American adolescents. The adolescent population found higher prevalence in bulimia nervosa is from 1.1% in a 15-17 years old Italians to 1.2% in Sweden. The age of onset for binge-eating is in late adolescence, although estimates vary to early adulthood 17-20 years. Over 70% of individuals with eating disorders report comorbid disorders: anxiety disorders (>50%), mood disorders (>40%), self-harm (>20%), and substance use (>10%). *There are more consequences of eating* disorders, the most important are iron deficiency anemia, obesity (that includes other complications like metabolic syndrome; diabetes, arterial hypertension), dental caries, secondary amenorrhea in anorexia nervosa and the most important consequence is the death.

Conclusions. Current trends in eating disorders highlight the increasing prevalence of eating disorders. In the treatment of eating disorders should be formed a multidisciplinary team with family doctors, teachers, psychologists and family.

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SOME ANGIOGRAPHICAL ASPECTS OF MYOCARDIAL BRIDGES

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Keywords: *myocardial bridge, left anterior descendent artery, myocardial hypertrophy.*

Introduction. Heart pathology takes the leading place among the diseases, with the highest rate of morbidity and mortality worldwide. The certain anomalies and anatomical variants of the heart arteries in a certain circumstance, can cause acute and chronic coronary events, myocardial ischemia during physical effort or after it. Myocardial bridges (MB) are variants of the intramyocardial position of the coronary arteries.

The aim of the current study is to investigate angiographic aspects of myocardial bridges.

Material and methods. The retrospective study was focused on the analysis of 6168 coronary angiography reports.

Results. The complete MB was defined when a portion of the subepicardial coronary artery, on one or more portions of its path, enters the myocardium with its subsequent reappearance, under the epicardium. The analysis of 6168 reports of diagnostic coronary angiography performed on people with suspected severe coronary atherosclerotic pathology, MB were detected in 331 of people, constituting 5.3% of the total number of cases. The angiographic identification of MB during angiographies is possible only by the direct pontine effect on the underlying vessel – systolic compression, in other words - the squeezing effect, "milking" of the blood column under the bridge. In the case of MB that cause the reduction of the vascular lumen up to 50%, the intramural portion of the vessel, at the time of maximum systole, was homogeneously stenotic, having uniform vascular contours. In the case of subtotal systolic compression, the subpontine vascular segment had the appearance of a "sawfish", with the alternation of narrow vascular portions and wider ones. The non-uniformity of the systolic stenosis of the artery can be caused by the arrangement of the pontine MB under the different angles and/or the variation of the areas of anti-systolic resistance of the vascular wall and the tissue structures in the subpontine perivascular space. In the longitudinal section plane trough the muscle-artery complex, the angiographic view in maximal systole takes shape of a "trough". Often, during the routine coronary examination, the middle and distal portion of the left anterior descending artery (LAD) do not show obvious systolic stenoses, but have a "trough" like deformity, which would correspond to the vascular deformation caused by the involvement of the artery under the MB, but which, in this case, is systolic inactive. Out of the 331 cases of patients detected with MB, in 97% of cases they were located along anterior interventricular branch, and in 3.6% of cases – on other vessels: right coronary artery, circumflex artery, first diagonal branch, marginal branches, posterolateral branch (fig. 4). In 65% of cases, the MB were located in the middle third of the LAD branch, and in 27% – the MB were covering the distal third of the artery. The degree of subpontine arterial systolic stenosis varies within 10-95%. From the total number of described MB, in 50% of cases they were causing insignificant systolic compression of the artery, reducing the lumen of the vessel up to 50% of the initial value (visually appreciated) and only in 16% of cases the degree of compression exceeded 75%. The comparative study did not determine any correlation between the degree of subpontine vascular compression and the degree of left ventricular myocardial hypertrophy in the main study group.

Conclusions. The coronary branch with the highest predisposition to myocardial bridges is the anterior interventricular branch. The stenosis' degree caused by myocardial bridges varies depending on its compression force between 10-95%. The most compressive myocardial bridges were detected on the anterior interventricular branch trajectory. No associations were found with the degree of the left ventricular myocardium hypertrophy.

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ANTIMICROBIAL AND ANTIFUNGAL ACTIVITY OF CU(II) AND BI(III) COMPLEXES BASED ON AMINOPOLYCARBOXYLATE IONS AND 2-FORMYL AND 2-ACETYLPYRIDINE THIO-SEMICARBAZONES

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Keywords: *Copper (II), Bismuth (III), complexes, thiosemicarbazones, aminopolycarboxylat, biological activity.*

Introduction. The biological properties of thiosemicarbazones are often related to metal coordination, which as result affects lipophilicity that controls the rate of entry into the cell. Metal complexes are generally more active than the free ligand, or the metal complex can be a vehicle for activation of the ligand as the cytotoxic agent. Among biologically active metal compounds, copper (II) complexes with 2-formyl and 2-acetylpyridine thiosemicarbazones proved to be among the most potent antiviral, antitumor and anti-inflammatory agents. Bismuth compounds have been widely used in medicine for more than two centuries due to their high effectiveness and low toxicity. In the antimicrobial realm, applications have been widespread, due to bismuth antiseptic, astringent, protective, antacid, antisecretory and local gastrointestinal properties.

Material and methods. The research is focused on the synthesis and biological activity investigation of homometallic and heterometallic coordination compounds with 2-formyl (HFopytsc) and 2-acetylpyridine (HAcpytsc) thiosemicarbazones of general formulas $\{Cu(Fo/Acpytsc)\}_2Cu(APC)\cdot nH_2O$, $Cu(HFo/Acpytsc)Cu(APC)\cdot nH_2O$ and $Bi(HAPC)(HAcpytsc)_m\cdot nH_2O$. Targeting at getting synergistic biological effect, three series of heterometallic coordination compounds of general formula $\{Cu(Fo/Acpytsc)\}Bi(APC)\cdot nH_2O$ with aminopolycarboxylate (APC) ions have been synthesized (n=1-9; m=1 or 2; APC=ethylenediaminetetraacetate ($edta^{4-}$), 1,2-cyclohexanediaminetetraacetate ($cdta^{4-}$) and diethylenetriaminepentaacetate ($dtpa^{5-}$). The composition and structures of the complexes have been determined by means of elemental analysis, IR spectroscopy and single crystal X-ray diffraction study.

Results. The antimicrobial activity of the complexes was evaluated against three bacterial strains, *Staphylococcus aureus* (ATCC 25923), *Escherichia coli* (ATCC 25922), *Acinetobacter baumannii* (BAA-747) Determination of the MIC (minimum inhibitory concentration, mg/mL) and MBC (minimum bactericidal concentration, mg/mL) was carried out by using serial dilutions in liquid broth method.

The results demonstrated that *Staphylococcus aureus* was the most susceptible to the considered compounds. In this case, the values of MIC and MBC vary, ranging from 0.001 to 0.5 mg/mL, indicating high to moderate activity of the compounds.

Conclusions. Generally, complexes based on 2-acetylpyridine thiosemicarbazone and $edta^{4-}$ ion, both homo and heterometallic, are more active than the analogues with other APC ligands. The highest antimicrobial activity was displayed by Cu (II) homometallic complex based on 2-acetylpyridine thiosemicarbazone (0.001 mg/mL), followed by its heterometallic Cu (II)-Bi (III) analogue with $edta^{4-}$ ion. Among the complexes with 2-formylpyridine thiosemicarbazone, the derivative of Cu (II) with 4-phenylthiosemicarbazone and $edta^{4-}$ ions displays an activity close to the one displayed by the 2-acetylpyridine representatives.

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LONG-TERM TRENDS IN CANCER MORTALITY IN THE REPUBLIC OF MOLDOVA

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Keywords: *the Republic of Moldova, mortality, cancer.*

Introduction. Cancer ranks second among the cause-of-death mortality patterns in the Republic of Moldova for both sexes and accounts for 16% of the overall mortality. The aim of the study is to analyze trends in cancer mortality by detailed cause in the Republic of Moldova for the period of 1965-2018 based on the continuous cause-of-death time series reconstructed in terms of the 10th revision of the International Classification of Diseases and Causes of Death.

Material and methods. This present study was based on the reconstructed cause-of-death time series for the Republic of Moldova published in The Human Cause-of-Death Database (www.causesofdeath.org) for the period 1965-2014 and prolonged until 2018. Population counts for 1965-2014 are intercensal estimates and for 2015-2018 are post-census estimates. The direct method of standardization was used for data analysis.

Results. The overall trend in cancer mortality during 1965-2018 is characterized by absolute insensitivity to the social and economic circumstances such as M. Gorbachev's anti-alcohol campaign and the socio-economic crisis of the 1990s. After the gradual increase in the 1980s, the trend in cancer mortality reversed and began declining in the 1990s. This downward trend was in sharp contrast with a huge upsurge in cardiovascular mortality and violent deaths due to the social and economic crisis of the 1990s. From the late 1990s onwards, the mortality trend resumed its growth and has continued up to now.

Tobacco and alcohol-related cancer mortality (of respiratory system, upper aerodigestive tract and urinary system) manifested a stable increase during 1965-2018. After a quick increase in the 1980s, mortality due to lung cancer showed a moderate decline in the first half of the 1990s followed by a steady growth. To explain the decline in mortality from lung cancer in the 1990s, we assume the hypothesis on competing risks earlier proposed to explain the same phenomenon, at least partially, in Russia and Ukraine. We suggest that the rapid growth of mortality from diseases of the circulatory system and accidents caused by the economic and the social crisis of the 1990s, increased the risk of dying from these causes among people suffering from cancer.

Breast cancer has followed a growing tendency for the period under study. Between 1965 and 2018 the standardized mortality rates increased by 2.5 times, which is linked, first, to the late diagnosis of the disease. Uterine cancer mortality, on the contrary, declined, especially fast in the 1970s and 1980s. Standardized mortality rates from stomach cancer reduced more than by three times in males and twice in females between 1965 and 2018. At the same time, the bowel cancer mortality and other digestive organs increased significantly.

Conclusions. Although the overall trend in cancer mortality is increasing in males and more or less stable in females in 1965-2018, the analysis of the detailed causes revealed the opposite trends. For certain causes (stomach and uterus cancer) some progress has been achieved, while for other causes (lung, breast and intestine cancer) the situation has deteriorated significantly. The moderate decline in lung cancer in the 1990s must be interpreted with caution.

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OCCUPATIONAL HEALTH HAZARDS AMONG PREHOSPITAL CARE EMERGENCY MEDICAL SERVICES IN REPUBLIC OF MOLDOVA

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Keywords: *occupational, hazards, workers, emergency, COVID-19.*

Introduction. Globally, the activities of healthcare workers are associated with exposure to countless occupational hazards, including biological, chemical, physical and psychological hazards. In the Republic of Moldova, prehospital emergency medical care services are organized as to ensure the availability, efficiency and quality of medical care provided to the population, though, from a hygienic point of view, some obstacles are created to control working conditions, employee morbidity, which have not been studied and improved for decades.

Material and methods. A meta-analysis of studies on the impact of occupational risk factors on Prehospital Care Emergency Medical Services (PCEMS) workers was conducted. Statistics from the database on „Evidence of infection with the COVID-19 virus in the Republic of Moldova" during the coronavirus pandemic period were analyzed and systemized.

Results. The reviewed literature emphasizes that emergency healthcare workers are constantly facing a number of work-related hazards, such as contact with sick people, responsibility for the health and life of the patient, night and round-the-clock service, unpredictable atmosphere, sometimes long-distance travel, as well as intellectual and psycho-emotional stressful situations. It was also confirmed that occupational risk factors have a negative impact not only on health, but also on the quality of medical care provided to the population.

Statistical data analysis indicated that, in Republic of Moldova, a total of 13,895 medical workers were infected with the COVID-19 virus during 20.07.20-07.04.21, of which 135 cases (0.9%) were fatal. Among PCEMS workers 782 COVID-19 cases were registered (5.6% of the total number of infected medical workers), including 5 people who died (3.7% of 135 deaths). At the same time, data analysis of COVID-19 infection among PCEMS, by geographical distribution, revealed the dominance in certain regions of the country: Chisinau – 243 infected medical staff, Cahul – 34 people, Balti – 30 infected workers, Causeni and Orhei – 28 cases per each. As regarding the age distribution of the infection cases, the most affected age group among PCEMS workers were aged between 49 to 58 years old – 239 registered cases, then 196 infected workers aged 39 – 48 years and 119 cases were included in the group of people aged 59-68 years old. However, a significant number of cases were also registered in young workers: 117 cases were aged between 29-38 years, 85 cases – aged 19-28 etc. Currently, the PCEMS workers face physical and emotional exhaustion, which can lead to medical errors, lack of empathy in patient care, decreased productivity and family problems.

Conclusions. Due to the stress, unpredictability and often life-threatening nature of the tasks that PECMS healthcare workers face on a daily basis the quality of working life has become an inevitable challege and one of the stringent problems of society as a whole. In addition, given the work-related hazards and current conditions caused by the pandemic, work conditions and quality of life, there is a more urgent need to analyze activities in this field and to improve the overall well-being and quality of life of workers.

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TREATMENT OF OVARIAN CANCER IN ADVANCED STAGES

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Keywords: *ovarian cancer, treatment in late stages, combined treatment of ovarian cancer, polychemotherapy treatment.*

Introduction. The ovarian cancer is the most frequent malign neoplasm of the female reproductive system in the countries of Western hemisphere of the planet. About 205.000 cases of this disease are diagnosed worldwide each year. Ovarian tumors (benign and malignant) can occur at any age, but more often occur at 40-50 years. In terms of frequency, they rank second among female genital tumors, with a significant prevalence of benign forms (75-80%). Ovarian cancer is a malignant tumor of epithelial origin (80-90%), which can occur either in an ovary or simultaneously in both ovaries. The risk of ovarian malignancy is higher for patients with breast cancer. As with breast cancer, the genetic factor plays a role in ovarian cancer, but is less pronounced. Ovarian cancer is rare in two or more close relatives of the patient. But if such a situation occurs, then for a woman there is a high risk of developing the disease. The relevance of the problem is that over the last decade it has been characterized by the rapid development of diagnostic technologies and the development of treatment programs for ovarian cancer. Ultrasound, computed tomography, magnetic resonance imaging and Positron emission tomography, various isotope research methods, tumor marker determination, and molecular diagnosis.

Purpose of paper: to assess the combined and complex methods of treatment in patients with ovarian cancer found in advanced stages.

The practical significance. Based on clinical data, the results of the surgical treatment and the combined (surgical and chemotherapeutic) treatment methods were evaluated, by providing indications and contra-indications on the treatment of ovarian cancer in late stages. The data established from the study performed can be used to guide clinicians in choosing the best choice of conduct and therapy to reduce the morbidity and developmental potential of ovarian tumors. The radiotherapy is indicated when surgical and chemotherapeutic treatment do not deliver the expected results, while the primary and secondary resistance to polychemotherapy does not stop the development of relapses and metastasis in the small basin**.**

Material and methods. This prospective study included 65 patients diagnosed with advanced ovarian cancer, who were treated at the Gynecology and Radiogynecology Department within the Public Medical Sanitary Institution of Oncology from the Republic of Moldova.

Results. The patients were aged between 20-80, the mean age being of 55+2; 32% of patients came from rural environment and 68% – from urban environment. The patients were diagnosed with different histological types of cancer, the most frequent form was the serous papillary cystadenocarcinoma – 32%, and a weekly differentiated solid carcinoma was diagnosed in 29% of patients. The patients were treated surgically and via chemotherapy. 100% patients underwent radical treatment (sub- or total hysterectomy, uni- or bilateral anexectomy, with or without the resection of omentum). The most used schemes of poliochemotherapy were CAP and CC. 55% of patients administered Cyclophosphamidum+Doxorubicinum+Cisplatinum, and 20% were treated via TC, CI, CD schemes.

Conclusions. The non-addressing to physician and ignorance of medical opinion makes the diagnosis of tumor processes develop into advanced stages, thus the treatment being a palliative one, depending on the evolution of tumor process and distant metastasis.

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MOLECULAR CHARACTERISTICS OF ANTIBIOIC RESISTANCE OF *SALMONELLA SPP.*, ISOLATED FROM FOOD PRODUCTS

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Keywords: *S. enterica, foodborn infections, antimicrobial resistance genes, mutations, MDR Salmonella spp.*

Introduction. The misuse of antibacterial drugs over the recent decades has resulted in antibiotic resistance as an increasing global threat. The widespread use of antimicrobial agents in human medicine, as well as in veterinary medicine for domestic and farm animals, and food production has caused the emergence of multidrug-resistant *S. enterica spp.*, including resistance to quinolones, fluoroquinolones and third generation cephalosporins, which are currently the drugs of choice for the treatment of severe salmonellosis, being one of the major global public health concerns. Thus, despite the great advances in food and drinking-water safety, salmonellosis is still considered one of the most common foodborne diseases worldwide. The purpose of this literature review was to analyse the genetic basis of antibiotic resistance in *Salmonella spp.*

Material and methods. This present paper analysed more than 30 scientific articles mostly retrieved from PubMed, EMBASE, HINARI databases. The most relevant data were included within the study review.

Results. *Salmonella spp.* belongs to the family Enterobacteriaceae, consisting of two main species, namely *S. bongori* and *S. enterica*, which are subdivided into more than 2500 serovars, based on antigenic differences in the lipopolysaccharide O antigen and two flagellin structures, most of them being recognized as potential human pathogens. Numerous researchers indicate that *S. enteritidis* is the most dominant serotype among the studied isolates. The study on antibiotic susceptibility shows a high level of multi-drug resistance to more than 3 drugs. A particularly high level of drug resistance was registered to tetracycline, fluoroquinolones (ciprofloxacin and nalidixic acid), ampicillin and trimethoprim-sulfamethoxazole. Many strains have shown concomitant resistance to ciprofloxacin and nalidixic acid, ampicillin and trimethoprim-sulfamethoxazole. Antimicrobial resistance genes have been identified to β-lactams (blaTEM, blaSHV, blaOXA, blaCTX-M and blaCMY), to tetracycline (tetA and tetB), to sulfonamide (sul1 and sul2), to chloramphenicol (from catA1 to cmlA) quinolone (qnrA, qnrB, qnrD, qnrS and qepA) and aminoglycoside (aac (6 ') – Ib, aac (3) – II and ant (2 ″) – I). The analysis of drug resistance determinants in isolated *S. enterica* strains will enable determining the presence and absence of particular genes or their various mutations, showing different resistance mechanisms to antibiotics. Changes have been recorded within the same gene across different geographic areas. The emergence of antibiotic resistance by mutation has been widely described and continues to be actively and comprehensively studied by scientists all over the world.

Conclusions. The results of many scientific papers have raised concerns about the emergence of multidrug-resistant *S. enterica*, especially to first-line drugs, as well as to third generation cephalosporins. The study of the molecular mechanisms of antimicrobial resistance confirms that these vary in *S. enterica*, depending on the geographic area and isolation environment. These findings provide the basis for further research of large-scale samples to better assess salmonellossis worldwide, as well as to consider the hygiene and infection control measures within the food industry, to prevent the spread of *Salmonella spp.* in food products.

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THE INFLUENCE OF BEEKEEPING PRODUCTS ON THE HEALTH OF THE POPULATION OF THE REPUBLIC OF MOLDOVA

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Keywords: *honey, bees, beekeeping, health.*

Introduction. Honey is a semi-liquid substance, with a sweet taste and pleasant aroma, rich in sugars and vitamins, produced by bees from the nectar of flowers, as well as from sweet tree secretions that they yield and remove from the outside. Bees produce a multitude of products that are rich in many bioactive compounds, such as propolis, pollen, honey, royal jelly and bee venom. Due to the high nutrient content of most bee products, these have begun to be consumed as food supplements over the recent decades.

According to the classification, bee products can be classified into primary and secondary ones. Primary bee products include honey, wax and pollen. The bee by-products are royal jelly, propolis and pasture. Numerous researches have also been carried out on the potential of bee products as agents in the cure of cancer, neurodegenerative diseases, cardiovascular diseases, gastrointestinal tract, as well as for the treatment of wounds and burns.

The purpose of the study. To study the influence of bee products on the health of the population of the Republic of Moldova, as well as their use in the treatment of various diseases.

Material and methods. The systematic analysis of the specialized literature was performed by using the appropriate methods and tools relevant to the proposed purpose.

The study was conducted on 76 people (aged between 19 and 32 years) from the Republic of Moldova. The research was conducted during the 2020-2021.

Results. A total number of 76 responses were obtained and received evaluated, with a sex distribution ratio of 1: 1. 86.8% of the respondents answered that they know about the benefits of bee products, while 84.2% confirmed the consumption of bee products. The most consumed bee products are as follows: honey (94.3%), propolis (37.1%) and honeycombs (28.6%). 47.4% of respondents consume bee products occasionally, 31.6% – weekly and 13.2% – daily. Raw honey is used in 45% of cases, which is the recommended method of consumption. Most respondents (39.5%) consume a recommended amount of honey of 10-12 g per day (50-100 g per week). 21.1% consume more than 100 g per week. And 34.2% consume less than 15 g per week. No one mentioned that they do not consume bee products due to allergies or pathologies and for whom honey consumption might be a contraindication. This study showed that most population consumes bee products and recognizes the nutritional and curative value of these products.

Conclusions. Due to their specific properties, bee products have a binomial value, i.e. they simultaneously fulfill the function of food and medicine. They not only heal, but also nourish and bring the necessary energy intake. Despite technological developments, honey is the only product in the world that could not be artificially synthesized. This fact further emphasizes its curative value and implicitly the importance of the existence of bees. Following the questionnaire, the most commonly consumed bee product remains honey, which de facto has the most beneficial effects on health.

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THE SOCIAL STRESS OF PUBLIC HEALTH EMERGENCIES AMONG MEDICAL PRACTITIONERS

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Keywords: *state of emergency, stress, medical practitioners, COVID-19.*

Introduction. One of the greatest states of emergency is the coronavirus pandemic (COVID-19) announced by the World Health Organization on 30 January 2020. Even though each pandemic has differences in regional, geographic and pathogenic characteristics and mortality rates, studies suggest that pandemics have a negative impact on healthy people. As a result of the rapid spread and increased mortality rate, this state of emergency has caused public health problems worldwide. In addition, the stress experienced by people in response to this situation has also had a severe negative effect on health professionals. The purpose of the requirement is to analyze the stress conditions of medical practitioners during public health emergencies.

Material and methods. Research of the selected bibliographic sources in PubMed has allowed this study to be carried out. The words used in the search engine were: "Health professionals", "stress" and "pandemic". The 12 latest sources were selected.

Results. In the last 10 years, several States of public health emergency have been recorded (COVID 19 pandemic, the Paris terrorist attack, the Nepal earthquake, the Zika outbreak, the Ebola outbreak, the poliomyelitis). The COVID-19 pandemic has created a multitude of acute challenges for healthcare institutions, including overloading of medical practitioners, lack of supply of necessary seafarers, the need to redesign care and financial losses.

Stressful events, such as emergency conditions, can increase anxiety. Health workers in a variety of areas, exposure risks report anxiety, depression, suffering and insomnia during the COVID-19 pandemic. Jackson et al. (2020) affirms that nurses, who are mentally, emotionally, and spiritually strong, play a critical role both in preventing the transmission of infections and in medical care of patients during global pandemics.

Compared to emergency workers, health workers had higher stress levels, leading them to more severe stress and difficulties in teamwork, physical fatigue, somatic diseases, irritability and difficulties in maintaining control of the situation, in taking decisions and predicting the consequences of their actions.

Major risk factors in developing stress and mental problems related to the COVID-19 pandemic according to Kisely et al. Are: beginner physicians, period of exposure, long quarantine time, having an infected family member, lack of practical support, stigmatization, and young age. Brier et al. (2020) supplemented the list with: Fear of their health, working conditions inappropriate to the situation, lack of protective equipment and means of aid. For health workers, social support reduces occupational stress and prevents common psychological suffering and psychiatric symptoms. Colleagues' support is also significant for health workers, as it impacts on work efficiency.

Conclusions. Stress together with depression can lead to the development of BURNOUT syndrome, which affects the health of medical practitioners but also the result of work. Thus, proper management of emergency States is required both at the institution level and at the level of the ministry and the government.

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OCCUPATIONAL CHARACTERISTICS OF THE SURGEON'S WORK

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Keywords: *surgeons, risk factors, morbidity.*

Introduction. The healthcare profession is considered one of the most difficult and vulnerable intellectual specialties, which requires a specific professional responsibility. Medical activity is quite diverse and commonly differs from other jobs, depending on the type of occupational activity, working regimen and density. Surgeons are not excluded from this group due to the nature of work carried out on a daily basis. The surgeon's daily workload makes him/her susceptible to a variety of common work-related illnesses. They are exposed to a number of occupational hazards during their professional activity. These hazards include sharp wounds, blood-borne pathogens, latex allergy, laser pens, hazardous chemicals, anesthetic gases, equipment hazards, static posts, and stressors. However, many of surgeons pay little attention to their health and do not even seek appropriate help when needed. It has been observed that occupational risks pose a huge risk to the personal well-being of surgeons.

Material and methods. A cross-sectional epidemiological research was carried out by using the descriptive method. The study involved surgeons from the Republic of Moldova. The research was conducted during 2020-2021 with the informed online consent from respondents. Participation in this study was absolutely voluntary. For this purpose, a comprehensive data collection tool has been developed. The questionnaire included 42 questions. The study involved 65 people with a mean age of 42.7 ± 1.9 years, the age ranged between 39-46 years. According to the gender criterion, women accounted for 35.4.8% and men - 64.6% of the respondents.

Results. Within hospital settings, one of the most common occupational accidents is being injured by medical instruments or contacting biological agents. The respondents reported higher work-related risks in 47.7% of cases, 43.1% of respondents categorized these risks as medium harmful, and 9.2% of cases as being low at risk. 96.9% of respondents follow the sanitary-hygienic and anti-epidemic norms and requirements, whereas 3.1% of them do not comply with the rules. The respondents' level of fatigue of at the end of the working day has a negative impact on their psycho-emotional state. The surgeons who participated in the study reported tiredness in 75.4% of cases, exhaustion in 16.9% of cases and only 7.7% of the respondents feel strong enough. As regarding the morbidity rate, 29.2% of surgeons stated to suffer from cardiovascular and digestive diseases, followed by 20% of diseases of the central nervous system, 16.9% - diseases of the endocrine system, 15.4% - diseases of the musculoskeletal system and eye disorders and 6.2% -diseases of the respiratory and urogenital system.

Conclusions. Compliance with the working conditions and rules neither guarantees a decrease in stress levels at work nor provides protection against occupational diseases, as well as does not reduce the great amount of psychological and emotional stress due to the responsibilities of healthcare personnel regarding patient's life and well-being.

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GLOBAL WARMING OR GLOBAL COOLING?

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Keywords: *warming, greenhouse gasses, temperature, industrial revolution, humanity.*

Introduction. Although nowadays multiple scientific organisations have shown solid evidence that Earth is going through global warming, some stories prove vice-versa, their main argument being those 2 years studies shown by NASA in data. However, you can't state the fact that our planet is going through global cooling based on such a short period. Studies have shown that on a larger time scale, atmosphere temperature can be explained using the Keeling Curve, which is a long-term study of CO_2 concentrations-the higher the concentration, the higher the temperature. And even if this curve is constantly jiggling up and down, meaning that the temperature during short periods such as a few years is either increasing or decreasing, the overall direction is an increase, meaning that slowly but steadily, Earth is warming on a global scale.

Material and methods. This research analysed the major aspects of global warming, using data provided by trustworthy scientific organisations, such as the Natural Resources Defence Council, National Geographic, NASA and others which have studied this field for a prolonged time. There have been avoided platforms that offered information without any reference to sources.

Results. Scientists generally regard the second half of the 19th century as the starting point of humanity influencing the global climate. How much of the warming since 1850 can be attributed to human emissions? Almost all of it. The intergovernmental Panel on Climate Change stated that greenhouse gas emissions are at an unprecedented level in the last 800.000 years, and the ones at fault are none other than humans.

The interdependence between carbonic acid gas and global temperatures have been confirmed during Earth's history. During the last 800.000 years, there have been CO_2 fluctuations, which were periodically higher or lower and the main cause were the changes of Earth's orbit around the sun, also known as Milankovitch Cycles. However, during this long-time frame, the concentrations of carbon dioxide have not been higher than 300 parts per million. Studies also have shown that this index began to grow since Industrial Revolution. Thus, in just less than 200 centuries humanity raised concentrations to more than 400 ppm.

Global warming has been a hot topic between highly developed countries, as it is already a worldwide problem. With current policies, by 2050 global temperature will be higher with 1.5°C. 20% of the people living in regions have already seen warming greater at least with 1.5 degrees Celsius in one of the seasons. That means that at least once every 5 years Earth's population will be exposed to severe heatwaves, and if the temperature will continuously rise by 0.5 degrees, the percentage of the victims will be doubled. This ''insignificant growth'' may cause annually deadly heatwaves like in Pakistan during 2015 with temperatures as high as 49°C, which caused 2000 deaths from dehydration and heatstroke, severe damage to livestock as well as agriculture.

Conclusions. To sum up, Earth periodically is passing through short term cooling, but overall, the temperature is steadily growing, and the reason is humanity. In just 2 centuries, the concentrations of carbon dioxide increased to about 1.3 of the norms. The effects of global warming look as follows: more greenhouse gasses->higher temperature->calamities->destruction and death.

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THE ROLE OF BORON AND ITS COMPOUNDS IN PREVENTING OSTEOARTICULAR DISEASES

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Keywords: *osteoarticular diseases, boron, boron compounds osteoarticular diseases, boron compounds.*

Introduction. Boron is a trace mineral that is supposed to be essential for human health. Organic boron compounds, which can be found in vegetable products are highly bioavailable for humans and can positively influence minerals such as calcium, phosphorus, magnesium and act in synergy with vitamin D, which are known to be beneficial for osteoarticular health. The aim of this study was to research the literature to determine the role of boron in preventing osteoarticular diseases.

Material and methods. This present paper analyzed 126 bibliographic sources that highlighted the boron and its compounds functions, as well as their role in preventing osteoarticular diseases.

Results. Boron is important for osteogenesis and its deficiency can lead to impaired growth and abnormal bones development. It supports bone health in postmenopausal women by reducing urinary loss of the minerals such as calcium, magnesium and phosphorus, which are essential for bone building. Boron supplementation can decrease calcitonin blood levels and increase levels of calcium and vitamin D at the same time.

According to recently published researches, people older than 40 can prevent and/or correct arthritis, osteoporosis and osteoarthritis by taking boron to or higher than 3 mg per day. In countries where soil was depleted of boron and daily intake of this mineral was 1 mg or lower, the incidence of arthritis was between 20 and 70%. Contrary to this, in countries where daily boron intake was 3 to 10 mg per day, the incidence of arthritis ranged from 0 to 10%.

A low serum level of boron was found in individuals with both rheumatoid arthritis and osteoarthritis. Low serum levels of this mineral were correlated with higher levels of rheumatoid factor, the antibody that causes destruction of the joints in both diseases. Studies that were done in the Middle East demonstrate that patients with rheumatoid arthritis have 50% lower serum boron than controls. This may suggest that boron can play a role in pathophysiology of rheumatoid arthritis and osteoarthritis and their severity.

Boron, as well as zinc, manganese, magnesium and aluminum, is present in the mineralized and non-mineralized portion of bones, although their role in bone functioning is not completely understood. Following these, one study has shown that boron levels were reduced in patients with osteoarthritis of the hip.

Calcium fructoborate, the most studied bioactive boron compounds, could be effective in reducing joint discomfort and stiffness, as well as in helping to reduce the need for use of non-steroidal anti-inflammatory drugs. It can significantly improve knee discomfort during a 2-week period when compared to placebo. Additionally, it synergizes with dexamethasone to increase the bone mineralization.

Conclusions. Boron can affect bone metabolism. An adequate intake of minimum 3 mg of boron per day is particular important for patients with rheumatoid arthritis, osteoarthritis or osteoporosis and even more important for individuals who are at high risk of developing these conditions.

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STRENGTHENING THE CAPACITY OF ANTI-DOPING EDUCATION

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Keywords: *national athletes, medical and didactic staff, play true, doping prevention, anti-doping education.*

Introduction. Contemporary sports activity is regarded as a complex phenomenon, involving both physical components, as well as a series of medical, legal, ethical and economic aspects. The essential element in promoting Olympic values is the spirit of clean sport, professional ethics and awareness of national athletes. Nowadays a lot of heated discussions on doping and its detrimental effects mark the world sport.

Doping becomes a dangerous phenomenon, with disastrous consequences for athletes, coaches, doctors and authorities. It is important to study this phenomenon in order to elucidate the social, moral and educational factors that contribute to perpetuating the practice of doping among national athletes, medical and didactic staff. The anti-doping process involves a complex of methods, with doping prevention by anti-doping education as the key one. The aim of the study was to evaluate from a bioethical perspective the effectiveness of anti-doping education of national athletes, medical and didactic staff during 2020.

Material and methods. The study design was approved by Ethics Committee of *Nicolae Testemitanu* State University of Medicine and Pharmacy. The interdisciplinary approach was proposed to study the practices and effects of doping on the health of athletes from a bioethical perspective – that is, studying the societal values that promote doping, the ethical, legal and medical framework of doping.

The research was performed by applying the adjusted WADA questionnaire, the use of online programs, the psycho-pedagogical methods of training and the evaluation from a bioethical perspective of the obtained results within meetings and workshops with the national sports federations and the national athletes, medical and didactic staff.

Results. The research identified an acute shortage of anti-doping specialists in Republic of Moldova. The standard prevention and eradication methods used by the National Anti-Doping Agency and its assemblies have positive effects resulted with reducing doping violations by national athletes, medical and didactic staff. It has been establish that effectiveness of anti-doping education depends on specific methods required for particular groups. Thus, online programs were more beneficial for young athletes, the workshops for adults, and the psycho-pedagogical methods for medical and didactic staff.

Conclusions. (i) There is a lack of competent anti-doping specialists in Republic of Moldova. (ii) The anti-doping educational methods used by National Anti-Doping Agency are effective and have beneficial effect. (iii) The particular groups require specific teaching methods of anti-doping education to be applied. (iv) The methodological, legislative and normative recommendations for the prevention and eradication of doping phenomenon must be elaborated.

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THE USE OF BIOMASS OF STREPTOMYCETES AS A STIMULATOR OF SOME BODY WEIGHT INDICES IN CHICKENS

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Keywords: *chickens, biomass of Streptomycetes, body weight, resistance.*

Introduction. Currently, various biologically active substances are used more often used in the breeding of birds as feed additives, which show a growth stimulating effect, but preferably of biological, not synthetic origin. Some of these substances with a stimulating effect on the growth of chickens are represented by the biomass obtained from apathogenic strains of Streptomycetes. The products of microbial synthesis of Streptomycete are used in the form of complex preparations, which supplement the feed ration of poultry, which leads to optimizing the metabolism, the immune system and increase the productivity. In addition to its nutritional value, it also has an antimicrobial and immunomodulatory activity, which promotes food digestion and inhibits the development of pathogenic microflora within the chickens' intestines. The aim of our research was to study the influence of biomass of Streptomycetes administered in food composition on the performance indices of body weight of chickens as well as on some blood indices.

Material and methods. The investigations were conducted within the ILR "Avicola Sărătenii-Vechi" v. Sărătenii Vechi, Telenești district. The biological material was one-day-old Adler's silver chickens. The research was performed on 150 chickens, divided into three groups of chickens (one control and two experimental samples), which were randomly distributed in three groups of 50 chickens per each. The study was performed over a period of 7 weeks. In order to establish the breeding performance for the chickens, identical maintenance conditions, as close as in poultry units, were created.

Results. The analysis of the obtained results revealed that the cumulative consumption of feed during the investigation period was lower in experimental group II, where this index constituted 1969 g, compared with 2034 g in the experimental group I and 2104.6 g in the control group. The dynamics of body weight was higher in the experimental group of chickens, which received biomass of Streptomycetes, indicating that the chickens in experimental group II recorded a 5.1% increase in body weight compared to chickens from the control group. The daily average also was higher in experimental group II, having 5.2% higher compared to the chickens from the control group. At the same time, the consumption of poultry feed was 9.3% lower compared to the chicks from the control group. The analysis of blood indices showed a slight increase of the number of lymphocytes and eosinophils from 4 to 9% in the experimental group II of chickens that received the biomass of Streptomycetes in their ration, which indicates an immunostimulatory action on the chickens' body.

Conclusions. The use of biomass of Streptomycetes in ration of experimental group of chickens had a positive influence on body weight index, which demonstrated a 5.1% increase of body weight compared to the chicks from the control group. The biomass of Streptomycetes stimulated an increase of the number of limbocytes and eosinophils in chickens from the experimental group II, indicating an immunostimulatory effect.

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CEREBROSPINAL FEVER, PARTICULARITY OF LABORATORY DIAGNOSIS

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Keywords: *cerebrospinal fever, bacterial meningitis, laboratory diagnosis.*

Introduction. Bacterial meningitis (BM) is a medical emergency. BM is the most common and notable infection of the central nervous system, can progress rapidly, and can result in death or permanent debilitation. Not surprisingly, this infection justifiably elicits strong emotional responses and, hopefully, immediate medical intervention. The advent and widespread use of antibacterial agents in the treatment of meningitis have drastically reduced the mortality caused by this disease. The majority of patients with bacterial meningitis survive, but neurological sequelae occur in as many as one-third of all survivors (especially newborns and children). This review is a brief presentation of the pathogenesis of bacterial meningitis and a review of current knowledge, literature, and recommendations on the subject of the laboratory diagnosis of bacterial meningitis.

Material and methods. The objective of the study was to carry out a bibliographic analysis of the literature related particularity of laboratory diagnosis of cerebrospinal fever. The paper analyzes the most relevant publications using *Google Academic* and *Pubmed* databases.

Results. Microorganisms encountered in cerebrospinal fluid require rapid and accurate means of detection and identification in the laboratory. Although restricted to morphologic study and Gram reaction, the Gram stain of cerebrospinal fluid has been the primary diagnostic tool for preliminary diagnosis of purulent meningitis, with identification of the etiologic agent often made within one to two hours by direct microscopic examination. Gram stain and appropriate culture procedures still provide the basis for comparing other diagnostic methods. Nonimmunologic methods that show promise in being both rapid and reliable include gas-liquid chromatography and the Limulus amebocyte lysate test. Fatty acid and carbohydrate profiles characteristic of *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Neisseria meningitidis*, and *Staphylococcus aureus* in the cerebrospinal fluid of human subjects and animals have been obtained by gas-liquid chromatography. Also, a unique compound has been detected by gas-liquid chromatography in cerebrospinal fluid from patients with tuberculous meningitis. The Limulus test has been reliable in spinal fluid and almost always gives positive results in *H. influenzae* and other Gram-negative meningitides. Nonspecific test procedures of varying degrees of accuracy and promise include lactic acid, C-reactive protein, and lactate dehydrogenase determination. Direct microscopic examination of cerebrospinal fluid remains the most practical and accurate method for identifying the etiologic basis of bacterial (and fungal) meningitis.

Conclusions. Despite the existence of numerous diagnostic techniques, determining the etiology of infectious meningitis remains difficult and cumbersome in many cases. Delay in diagnosis is a significant contributor to mortality in bacterial meningitis. When evaluating a patient for meningitis, physicians must incorporate many factors to determine the most appropriate tests to order. Physicians must consider local epidemiology, duration of symptoms, current and recent medications, current immune status, country of origin, current living situation, social history, vaccination status and history of travel among other factors. Cutting-edge technologies hold significant promise but require extensive bioinformatics and sample processing expertise.

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CARDIOHEMODYNAMIC INDICES CHANGES IN STUDENTS DURING THE COMPUTER LESSON

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Keywords: *cardiohemodynamic indices, students, computer lesson, pulse, blood pressure.*

Introduction. Education and training, free time and the rest of children and adolescents in the current conditions are impossible without new information technologies, primarily computer technologies. The computer is a means, which provides feedback in the learning process, individualizing the learning process, allows searching for information from a large number of sources, modelling the processes or phenomena studied, organizing collective work and in groups. Parallel with the advantages of using computers in the instructional-educational process, they also have a negative influence on the body if they are not used correctly. Research shows that in the computer training process is registered fatigue, emotional disorders, posture disorders, severe neuromascular disorders, osteoarticular, cardiovascular disorders, carpal tunnel syndrome, computer vision sindrom, computer is an important risk factor for obesity.

Material and methods. A cross-sectional epidemiological research was initiated. The research was conducted on 123 students, including 52 boys and 71 girls. Pulse (beats/min.) and blood pressure (mm Hg) measurements were made in 10 classes (grades 5-9) at the beginning and end of the computer lesson. Using the obtained data, the following indices were calculated: pulsatile voltage (mm Hg), average dynamic voltage (mm Hg), systolic volume (mL), Minute-heart volume (L/ min.). The students, together with the computer science teacher, signed an agreement to take the measurements.

Results. The pulse rate in the studied group of students at the beginning of the computer lesson, constituted values between 70 and 86 beats/min., with an average value of 77.6±3.1 beats/min., and at the end of the lesson it decreased, constituting values between 66 and 83 beats/min., with an average value of 75.8±3.7 beats/min. ($p<0.01$).

At the beginning of the lesson the systolic blood pressure was 104-109 mm Hg (109.6±3.3 mm Hg), at the end of the lesson to most students the blood pressure slightly decreased, registering a value between 96 and 118 mm Hg, (105.5±4.7 mm Hg) ($p<0.001$). Diastolic blood pressure was 73-89 mm Hg (78.1±3.9 mm Hg.) at the beginning, and 71 and 85 mm Hg (75.7±4.0 mm Hg) at the end of the lesson ($p<0.001$).

The values of cardiohemodynamic indices during the computer lesson between boys and girls decrease more pronounced in boys, except for the minute-cardiac volume which is identical in boys and girls.

The changes of the registered cardiohemodynamic indices induce the tension of the body's systems and as a result – the development of fatigue. Quantitative and qualitative changes in heart rate are manifested less by the state of the myocardium and more pronounced by the general reaction of the body, by the particularities of the connections between systems, made in the dynamics of concrete physiological processes. At the same time, the data of the literature indicate that the decrease of the integral characteristics of the heart rhythm and the hemodynamic indices represent the manifestation of the restructuring and consolidation of the forces, determined by the emotional tension to a greater extent.

Conclusions. The decrease in the values of most circulatory system indices at the end of the computer lesson is recorded in more than half of the students and shows the predominance of parasympathetic regulation of the vegetative nervous system, therefore it speaks of an advanced degree of fatigue.

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PREVENTION STRATEGIES FOR PARASITIC INFECTIONS

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Keywords: *parasitic diseases, helminthiasis, prevention, health programs.*

Introduction. A parasite is an organism that lives in or on another organism (the host) and benefits (for example, by deriving nutrients) at the host's expense. Parasitic diseases exert a pronounced biological diversity and an increased ability to adapt to new environmental conditions Therefore, it points to a widespread of parasitic infections among the population of the world, which is a global public health problem.

The relevance of parasitic diseases is due to their high share among infectious diseases. According to WHO, more than 1 billion people are estimated to be infected with various species of intestinal parasites, whereas according to official statistics based on national reports, helminthiasis is also widespread in the Republic of Moldova.

Material and methods. To describe and measure the phenomenon, an analysis of scientific literature sources, as well as Google Academic, Pubmed and ECDC databases was carried out.

Results. Most parasitic infections are often linked to areas with inadequate sanitation. Fecal-oral transmission is a common way to acquire a parasite. A parasitic infection is suspected in people who have typical symptoms and who live in or have travelled to an area where sanitation is poor.

The intensification of international relations and population migration over the recent years poses a threat on importing parasitic diseases from the other countries.

According to literature sources, there is a consensus within the research community that parasitosis remains undiagnosed in many patients. Thus, it determines the most vulnerable population, mainly affecting the children's health.

Laboratory analysis of specimens, including special tests to identify proteins released by the parasite (antigen testing) or their genetic material (DNA) have been described in the studied literature for diagnosing parasitic infections.

Based on data analysis of literature sources, growth proliferation of parasitic infections is probably due to the inadequate system of diagnosis and epidemiological surveillance. Therefore, healthcare system is currently lacking strategies regarding the prevention of parasitic diseases such as cost-effective preventive measures, which lead to unjustified expenses. Some studies emphasize the great importance of cultural and health level of the population while complying with prevention measures.

Recent research shows the innovative role of various prevention strategies used in the health systems elsewhere in the European region. These involve a multidimensional approach to improving health, including the development and implementation of policies and legislation; early detection of patients with parasitic diseases, followed by their isolation and treatment; promoting educational activities and raising public awareness of the health programs.

Conclusions. Parasitic diseases are the most common human parasitic diseases. In addition to the health effects of the population, parasites are directly or indirectly associated to socioeconomic decline. Parasitic diseases are accompanied by new emerging risks and require an increased attention and promotion of preventive measures.

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EPIDEMIOLOGICAL ASPECTS, DIAGNOSIS AND PREVENTION OF ROTAVIRAL INFECTION

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Keywords: *rotavirus infection, rotavirus vaccination, epidemiology, diagnoses.*

Introduction. Diarrheal diseases are the leading cause of childhood mortality globally as well as in Republic Moldova. Rotavirus has been recognized as the most common cause of infectious gastroenteritis in infants and young children. The primary mode of transmission is the fecal-oral route, through direct contact between people. Nowadays, various diagnostic methods are available. Antigen-detection immunoassays on stool specimens allows lab to rapidly detect rotavirus antigens. The studied scientific works demonstrated that introduction of rotavirus vaccines in the vaccination calendars in many countries has resulted in significant decreasing in the prevalence of rotavirus gastroenteritis and of infant deaths associated with rotavirus.

Material and methods. The objective of the study was to carry out a analysis of the literature related etiology, epidemiology diagnostic methods and prevention measures of rotavirus infection. The bibliographic search was made using internet search medical databases as Medline (PubMed) and Scopus, as well as through the websites of the World Health Organization (WHO), the Center for Disease Control and Prevention (CDC), the European Center for Disease Control and Prevention (ECDC) and other relevant web pages.

Results. Rotaviruses are the most important cause of severe diarrheal illness in infants and young children worldwide. Rotavirus genotypes vary by season, country. According our finds the co-circulation of several genotypes are noted each year. The vast majority of human cases are caused by five genotypes within serogroup A rotavirus: G1P[8], G2P[4], G3P[8], G4P[8] and G9P[8]. The analyzed scientific works indicated that clinically, it is not possible to differentiate rotavirus infection from other infectious diarrhea. Thus, the laboratory tests of stool are needed to confirm diagnosis of rotavirus infection. At the moment various tests are available for detecting rotavirus as ELISA, latex agglutination, polymerase chain reaction and other assays.

Also, the authors of the papers highlighted that the rotavirus infections are vaccine-preventable following the EU/EEA approval of two oral, live attenuated rotavirus vaccines in 2006 for use in infants. Analyzed studies demonstrated that during the first year of an infant's life, rotavirus vaccine provides protection against severe rotavirus illness and against hospitalization from rotavirus illness. Majority of the research showed that the vaccination of populations against rotavirus led to dramatic decreases of prevalence of the rotavirus infections.

Conclusions. Our study reviewed the published paper and highlighted the following features: the most affected children were those under five years of age; rotavirus infection is highly contagious and easily transmittable; it impossible to diagnose rotavirus infection by clinical symptoms because the clinical features of rotavirus gastroenteritis do not differ from those of gastroenteritis caused by other pathogens. Antigen-detection immunoassays on stool specimens to rapidly detect rotavirus antigens and help lab to establish a diagnosis. Vaccination is the best way to prevent rotavirus. Rotavirus-vaccinated populations have experienced dramatic decreases in rotavirus infections and transmission.

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CLINICAL-EPIDEMIOLOGICAL ASPECTS OF PEDIATRIC PATIENTS WITH COVID-19

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Keywords: *COVID-19, children, seroconversion.*

Introduction. Despite spreading worldwide, the clinical and epidemiological patterns of COVID-19 still remain uncertain, especially among children. Further research is needed to elucidate the interaction between SARS-CoV-2 virus and the child's body. Currently, there are few reports on sero-epidemiological analyzes of serum antibodies anti-SARS-CoV-2 in children, but also how long the antibodies and potential protection persist. Moreover, knowledge about the factors that affect the time to seropositivity is lacking. To prevent and control COVID-19 in children, larger studies are needed and the knowledge should be strengthened to monitor the infection at the population level. The purpose of the paper: determination of some clinical-epidemiological and evolutionary aspects of COVID-19 in children hospitalized in PMSI Municipal Clinical Hospital of Contagious Diseases for Children.

Material and methods. The clinical-epidemiological features of COVID-19 have been analyzed in 1102 children, hospitalized in Clinical Hospital of Contagious Diseases for Children during 2020. The case management was in accordance with the requirements of the National Clinical Protocol, in some children investigations of specific immunity against SARS-CoV-2 were performed by ELISA method, in paired serum samples. The information was grouped and analyzed using the Microsoft Excel 2019 program, according to age, sex, living environment, average length of hospital stay, form of disease, and the results of serological investigations, using the method of descriptive, cross-sectional epidemiological study.

Results. The group of pediatric patients with COVID-19 were represented equally by boys and girls (51.08% vs 48.92%), the age distribution being 0-3 years – 29.13%, 3-7 years - 20.87%, 7-11 years – 16.06% and 11-18 years 33.94%. The urban living environment has been set at 71.71%, rural – at 28.22% patients. The children were hospitalized on average of 3.26 (±2.60) days of the disease, the average length of stay was 14.02 (±5.25). Mild forms were diagnosed in 11.88%, moderate – in 85.29% and severe – in 2.81% of cases, respectively. The results of specific serological investigations were positive when taking the first sample in 21.15% IgM and 17.30% IgG, in the second sample the share of seropositivity was 83.65% IgM and 79.32% for IgG ($p<0,001$). Seroconversion varied according to the week of the disease (I, II, III, IV), obvious results after the 2nd and 3rd week of the disease, both for IgM (18.4%, 85.47%, 81.11% and 100% respectively), as well as for IgG (14.42%, 81.19%, 76.6% and 100%). All children were recovered, there were no cases of deaths.

Conclusion. COVID-19 infection in hospitalized children evolved more frequently in medium (85.29%) and mild (11.88%) forms, middle and preschool students dominated in the age structure. In general, pediatric patients develop an age-dependent anti-COVID-19 immune response after the 2nd and 3rd week of illness.

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ASSESSMENT OF LIFESTYLE AMONG STUDENTS

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Keywords: *risk factors, students, healthy lifestyle.*

Introduction. Adolescents and teenagers aged between 10 and 18 years make up almost a quarter of the total population of the Republic of Moldova. Nowadays, like never before, they are exposed to an extremely big number of risk factors that have a negative influence on their lifestyle. The number of healthy children that attend school has decreased about 3 times in the last decade, resulting from the failure to comply with lifestyle and other life-threatening activities. The major culprits of diseases are considered some wide-spread hazards like: sedentary life, irrational nutrition, smoking, excessive alcohol consumption, drugs, psychosocial stress – factors that could be avoided, yet are usually promoted in what we call today „lifestyle of each individual". It's obvious that children's health represents one of the major current problems worldwide.

Material and methods. The study was conducted during the years 2020-2021 on 72 students, of which 23.6% – elementary school, 38.88% – middle school, 37.49% – high school children. 63% were female and 37% – male. In order to assess the risk factors, a questionnaire with 32 questions divided in a few compartments was designed.

Results. The questionnaire was completed by 72 students, aged between 9-18 years. 61.11% of interviewee stated that they are healthy, 36.11% had minor health issues, and 2.78% were convinced that they had serious health problems. The last physical examination was performed by 58.33% in the last 12 months, 30.55% – in the last 24 months and 11.11% stated that they didn't have a physical examination in more than 36 months. As regarding the unhealthy lifestyle factors viz. smoking: 48.14% males stated that they smoke/tried to smoke and 51.86% denied to have smoked; females were more reserved: 11.11% tried to smoke and 88.89% didn't try. Among those who consume alcohol: 51.38% consume occasionally, 47.22% don't consume, 1.38% consume regardless of the occasion; therefore, those who consumed more than a glass of alcohol were up to 10 years – 8.33%, 10-12 years – 8.33%, 13-15 years – 29.16%, 16-18 years –19.44%, and those who consumed less than a glass – 34.73% of cases. Among those informed on sexually transmitted diseases: 43.05% – were informed, 43.05% – partially informed, and 13.89% know nothing about this subject. During the week, the students consume milk and its derivatives – 19.44%; meat, processed foods and fish – 31.95%, fruits and vegetables – 25%, cereal products and dried vegetables – 8.33%, and fast-food – 15.27%. Obesity was found as following: normal weight – 75%, underweight – 11%, overweight – 14%, first and second-degree obesity – 0% of cases. As regarding free time activities: watching TV – 13.88%, surfing the Internet – 44.44%, reading – 12.5%, sports – 11.11%, walking outdoors – 16.67%, other activities – 1.38% of students. The survey on illegal drug use sowed that: 97.3% – never used drugs, 2.7% – stated that they tried to use drugs.

Conclusions. Students are daily exposed to many risk factors, which require further studies and strategies for promoting a healthy lifestyle.

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SUBCLINICAL VARICOCELE – A CAUSE OF MALE INFERTILITY

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Keywords: *subclinical varicocele, infertility, semen analysis, Doppler-ultrasound, treatment, oxidative stress.*

Introduction. According to World Health Organization, infertility is "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (and there is no other reason, such as breastfeeding or postpartum amenorrhea). Several epidemiological studies suggest that a major cause of male infertility is varicocele, namely – 39-60% of infertile patients present subclinical varicocele. The diagnosis of this entity is problematic, because the implementation of screening programs is not justified by clinical studies, and therefore are neither recommended by the American Associations of Urology, nor by the European Association of Urology.

Material and methods. Review type study. Bibliographic search in PubMed and Google Scholar databases, applying the keywords „subclinical varicocele", „infertility", „semen analysis", „Doppler- ultrasound", „treatment" and „oxidative stress". The full articles published in known journals during the last 5 years as a priority have been selected. Information on subclinical varicocele epidemiology, etiology, diagnosis and treatment were selected and processed, so the final bibliography includes 49 references.

Results. Recent studies suggest that subclinical varicocele has a high incidence among infertile men (between 39-60%), moreover, it increases about 10% with each decade. The anatomy of the left testicular vein, genetic factors, body mass index and valvular incompetence are considered major etiological factors, which steadily lead to scrotal hyperthermia and, subsequently to oxidative stress which damages sperm cell, alters semen analysis and leads, in time, to testis hypotrophy.

The main diagnostic tool remains Doppler-ultrasound, but unfortunately, it cannot be used in a large scale as screening program due to poor cost – benefit analysis, therefore subclinical varicocele is diagnosed occasionally, during a routine examination. Treatment is also a concern for urologists because two recent meta-analysis have shown that surgery is ineffective as it doesn't improve nor semen analysis, neither pregnancy rates. Conservative treatment, although promising, has several limitations due to it's short time efficacy and patient compliance. Several studies suggest that subclinical varicocele is a progressive disease and might evolve, through time, in a clinical one.

Conclusions. We still need several convincing studies to assess the impact of subclinical varicocele on reproductive function, especially in young adults, who haven't yet fulfilled their reproductive purposes, it's progression to clinical varicocele (there are not yet convincing studies), the treatment options (as surgery is not the only option any more and more priority is given to conservative treatment) and the need of implementation of screening programs in young boys and adolescents in order to prevent on time the deterioration of testis function.

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DIET BEHAVIOR IN ADOLESCENT GIRLS, FACTORS AND CONSEQUENCES OF NON COMPLIANCE

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Keywords: *teenage girls, diet behavior, body image.*

Introduction. Adolescence is one of the most critical periods of life, in which physiological, sexual, neurological and behavioral changes take place. Since it is a period of rapid growth, an adequate nutrition is crucial for a full development of both physical and mental, as well to avoid some health problems in future. The need to analyze diet behavior at teen girls it's justified by following: future adult health, passing food practices to the next generation and of course avoiding diet-related health problems that can lead to decreased work capacity. Canadian, Australian, American and British cross-sectional data suggest similar high rates of attempted weight loss among adolescents (S. Findlay 2004). In another Canadian study it was found that, by the age of 18 years, 80% of girls of normal height and weight reported that they would like to weigh less (J.M Jones 2001). In Republic of Moldova current problem is not sufficiently studied, there are only a few recommendations about nutrition of adolescents and some vague studies.

Material and methods. The method used for the study is retrospective descriptive epidemiological investigation. The data collection took place through the review of studies and scientific articles on specialized sites such as Research Gate, PubMed etc. and by questioning the target group through the Google Forms platform. The questionnaire consists of 4 compartments and includes general data, teen's diet behaviors, some motivating factors and consequences for health. The study involved 100 girls aged 12-18 (average age – 15,7 years) from the Republic of Moldova and without chronic diseases or diagnosed eating disorders.

Results. A teenager's diet should include five main meals every day: breakfast, lunch, dinner and two snacks. It must also include all five important food groups. Only 21% of girls have all 5 meals every day, 26% have 4 meals, except one snack and 15% have only 3 basic meals. When asked about missing one of the meals only 32% answered that they never miss the breakfast, 36% never miss the lunch and only 36% said that they always eat dinner. The main products included in daily diet are: vegetables, cereals, meat or fish, but girls said they also consume various bakery products, cakes, processed products. Also, 75% said they eat fast food 1-2 times a week. There are 4 groups of factors correlates of dieting and unhealthy weight control behaviors in teenagers: individual, family, environmental and other factors. Also we can add media and social networks. I asked some questions from BSQ-34, and we can notice that only 22% of girls never thought about dieting and 10% always think about this. 13 girls have ever induced vomiting, 9 used laxatives and 47% resorted to exaggerate physical activity ever. According to the body mass index-for-age percentiles, 80% of girls have normal weight.

Conclusions. The diet behavior of girls is inappropriate, they eat unhealthy products, skip the meals and don't respect mealtimes. One of the most important factors that determine unhealthy diet behaviors are body image distortion and influence of social media. Consequences of unhealthy diet include growth retardation, delayed sexual maturation, decreased intellectual capacity or even eating disorders.

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SLEEP DISORDER AS A PREDISPOSING FACTOR TO OBESITY

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Keywords: *sleep disorders, body mass index (BMI), obesity.*

Introduction. The modern humans today are loaded with many activities such as traffic congestion, stressful jobs, time spent on social networks and other activities that take up time and energy, so that sleep and rational nutrition have come to be considered a waste of time. The modern humans can no longer afford to "waste time" sleeping or preparing healthy food. Some studies have shown that those who sleep little, less than 5-6 hours a night are 45% more likely to become obese. Fatigue caused by insomnia has a major impact on metabolism, affecting the production of leptin, which is responsible for the feeling of satiety. Thus, the craving for carbohydrates will increase due to the low level of leptin, according to research, respectively increases the risk of obesity. People who sleep little tend to skip main meals and tend to eat between meals, select high-calorie foods, which promotes weight gain.

Material and methods. The study was performed at the University Clinic of Primary Health Care of Nicolae Testemitanu State University of Medicine and Pharmacy, based on the addressability of patients diagnosed with obesity, during 2020. The research was outlined in a cross-sectional descriptive study, which included interviewing based on the questionnaire about sleep disorders and publications from specialized sources. This present study used bibliographical, observational, description, statistical, nutritional methods etc. Based on the informed consent for the study, 112 females participated, diagnosed with obesity in association with sleep disorders, aged between 50 and 59 years, which served as criteria for inclusion in the study.

Results. The assessment of body mass index (BMI) values showed that out of 112 participants, 81 (72.32%) cases had BMI ≥30 kg/m^2, 26 (23.21%) BMI ≥35 kg/m^2 and BMI ≥40 kg/m^2 was determined in 5 (4.46%) people. The mean body weight increase at the time of the patient's determination of the phenomenon was 6.0±0.20 kilograms per year. Out of 112 people included in the study, 74 (66.07%) people complained of sleep disorders before becoming obese, stress being the common cause. Of which 25 (33.78%) persons reported intermittent sleep with periodic awakenings from 3-5 times a night, 17 (22.97%) of respondents had difficulty with falling a sleep, shallow sleep – 12 (16.22%) and other trubules of sleep the 20 (27.03%). From participants 59 (79.72%) complained of multiple sleep disorders. 20 (27.02%) respondents with sleep disorders reported eating during the night.

Conclusions. Reduced sleep duration and stressful conditions are common problems of modern societies, which along with unhealthy consumption of high-calorie foods at inappropriate times have led to weight gain. To reduce obesity, a sleep duration.

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BIOSAFETY AND BIOSECURITY PRACTICES IN MICROBIOLOGICAL LABORATORY

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Keywords: *biosafety, biosecurity, microbiological lab, occupational health.*

Introduction. Biosafety and biosecurity are related values, both protecting individuals and societies from harm arising from biological agents. Microbiological Labs are on the front line for the identification of outbreaks of emerging infectious diseases. The emergence of newly identified pathogens, as well as the re-emergence of pathogens with public health significance, exacerbates the global threat of infectious diseases. Public health laboratories protect the public's health by providing services to prepare for and respond to all hazard threats. Therefore, these laboratories require proper biosafety and biosecurity preventive strategies to protect staff health from pathogenic infection.

Material and methods. The objective of the study was to carry out a bibliographic analysis of the literature related biosafety and biosecurity in laboratories. The paper analyzes the most relevant publications using *Google Academic* and *Pubmed* databases.

Results. Analyzed studies in recent years mentioned that microbiological laboratories is special work environments that may pose special infectious disease risks to persons in or near them. The integration of biosafety and biosecurity into one risk management framework as well as the adoption of new governance concepts building on organizational culture might provide suitable ways forward in developing a consistent global approach.

The scientific analyzed papers showed that the capacity of a microbiological lab to effectively respond to threats is based in its infrastructure: a highly skilled workforce, modern equipment and advanced technologies, facilities that ensure safety and security of lab workers and society as a whole. At the core of this effective response is a comprehensive quality management system with biosafety and biosecurity practices vital to every function. Responsible laboratory practices, protection, control and accountability for valuable biological materials will help prevent their unauthorized access, loss, theft, misuse or intentional release. In this context, it is essential that laboratory and service staff have the skills required to work safely in the lab.

In fact, the provision of a healthy and safe laboratory working environment has become the cornerstone in laboratory practices were highlighted in analyzed papers

Appropriate biorisk management measures tailored to specific facility needs allow the development and implementation of cost-effective, performance-based protection systems.

In fact, the provision of a healthy and safe laboratory working environment has become the cornerstone in laboratory practices were highlighted in analyzed papers.

Conclusions. Biosafety and biosecurity, refers to the implementation of laboratory practices and procedures, specific construction features of laboratory facilities, safety equipment, and appropriate occupational health programs when working with potentially infectious pathogens and other biological hazards. There is a need to implement the biosafety/biosecurity culture in all types of laboratories: microbiology, mycology, bacteriology, and virology.

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MORTALITY ATTRIBUTABLE TO COVID-19 AND AIR POLLUTION. AN ITALIAN CASE STUDY

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Keywords: *COVID-19, mortality, PM10, ecological study.*

Introduction. Several evidences suggest an association between the air pollution and COVID-19 mortality. However, other factors might impact on COVID-19 mortality. The aim of present work is to explore association between air pollution and COVID-19 mortality in Emilia-Romagna region one of the Italian Region strongly involved in the initial phase of COVID-19 pandemic, taking into account other exogenous factors.

Material and methods. An ecological study is used: the official open data are aggregated at the municipality level, for a total of 328 municipalities in the Emilia-Romagna region (https://www.istat.it/). The cumulative-period COVID-19 deaths were the outcome of interest. The deaths attributable to COVID-19 occurred in the pandemic period January 1 – August 31, 2020 were estimated as the excess of all deaths registered in the pandemic period with respect to the average number of all deaths in the same period of previous 5 years. As main predictor of COVID-19 mortality the particulate matter (PM) with diameter less than 10 μm was chosen. As proxy of air pollution at municipalities level, PM10 emissions in tons/year was used (https://dati.arpae.it/dataset/inventario-emissioni-aria-inemar). Several potential determinants of COVID-19 mortality or confounding for the association between PM10 exposure and mortality were also investigated: Degree of urbanization index (DEGURBA), Italian multiple deprivation index (IMD), Ecoregions index (https://www.isprambiente.gov.it/it/attivita/suolo-e-territorio/) and the amount of soil consumed. Geographic distribution of COVID-19 deaths, air pollution and predictors were plotted in maps to describe graphically the spatial distribution. After assigning zero to response variable for those municipalities with a no COVID-9 attributable deaths, negative binomial regression was applied.

Results. In the 328 municipalities of Emilia-Romagna, the estimated number of deaths attributable to COVID-19 during the first 8 months of 2020 was in median around 6 deaths (IQR: 15.3). Nevertheless, 5 municipalities showed a number of deaths attributable to COVID-19 over 75th, ranging from 160 to 540; for 75 municipalities no death attributable to COVID-19 was estimated. The median PM10 emissions was around 23 tons/year (IQR: 20.7): 15 municipalities showed a PM10 over 75th. The great majority of municipalities had a thin population (about 60%) and were prevalently rich or very rich: only 7% deprived. The predominant ecoregion was that of central Tuscan and Marche Apennines (about 48%). In median the percentage of soil consumed was 8.5%. The municipalities with the highest number of COVID-19 attributable deaths had a quite high level of PM10 emissions. These were all rich or very rich urban or semi-urban municipalities. Conversely, the municipalities with the lowest tons by year of PM10 emission showed lower COVID-19 attributable mortality. These areas were also characterized by increasing level of deprivation and were mainly rural. The effect of PM10 emission on the COVID-19 attributable deaths estimated in the study period was confirmed by multivariate analysis.

Conclusions. The main findings from this work seems to confirm the effect of PM10 on the COVID-19 mortality, in agreement with published evidences. But, given the limit of the ecological study our results may not be conclusive. The latter should be integrated with further studies that analyse the single individual.

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THE CHALLENGES AND SOLUTIONS ON ANTIMICROBIAL RESISTANCE

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Keywords: *antimicrobial resistance, antimicrobial stewardship, AMR surveillance.*

Introduction. Antimicrobial resistance (AMR) is one of the most serious global public health threats. AMR it is also listed as important scientific, health and economic challenges and in the absence of some urgent action to address specific diseases the world will face an alarming threat in the following years. Analyzed studies and World Health Organization reports showed that the use of broad-spectrum antimicrobials for treatment of invasive infections has resulted in an increase in AMR. The emergence and spread of bacteria resistance can be associated with many factors, but they always represent an evolution process: a response to selective pressure. As a consequence, the treatment of such infections is becoming increasingly difficult leading to treatment failures and increased mortality.

Antimicrobial stewardship programs (ASP) effective suppose treatment for patients with bacterial infection, evidence and information to educate and support professionals and patients to reduce unnecessary use and minimize collateral damage.

Material and methods. The objective of the study was to carry out an analysis of the literature related antimicrobial resistance, antibiotic stewardship programs. The bibliographic search was made using internet search medical databases as Medline and Scopus, as well as through the other relevant. We review evidence of progress with these aims in Europe and nationally in Republic of Moldova.

Results. Excessive and inappropriate use of antimicrobial medicines and poor infection control practices has transformed AMR into a serious threat to public health worldwide. If trends continue, we would revert to on world where simple infections are no longer treatable. AMR is driven by the continued use of antimicrobials, and it is unlikely that the threat of resistance can be effectively mitigated by the discovery of new antimicrobials

Surveillance is a crucial factor in creating a path to reach the effects caused by resistance. The integration of the data regarding AMR is desperately needed not only at regional, national but also at global level. Antimicrobial stewardship promotes the judicious use of antimicrobials to limit the development of AMR.

In the hospital setting, are required infection control measures and ASP administered by multidisciplinary teams of experts such as infectious diseases physicians, clinical pharmacists, clinical microbiologists, etc. ASP support coordinated interventions designed to improve and measure the appropriate use of antimicrobials including selection, dosing, duration of therapy and route of administration.

Conclusions. Antimicrobial resistance is now recognized by the scientific community, the society at large and most policy-makers as an important problem to confront. Clinicians, microbiologists, pharmacists, researchers and the general public must share all the available data on antimicrobials, infections, therapy and information regarding public health threat of AMR.

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LABORATORY DIAGNOSIS APPROACHES OF COVID-19 INFECTION

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Keywords: *coronavirus disease, laboratory diagnosis of COVID-19, SARS-CoV-2.*

Introduction. The coronavirus disease 2019 (COVID-19), is a global pandemic caused by the severe acute respiratory syndrome coronavirus 2. The COVID-19 pandemic has forced the scientific community to rapidly develop highly reliable diagnostic methods in order to effectively and accurately diagnose this pathology, thus limiting the spread of infection. A robust and responsive testing infrastructure is essential to our success in stopping the spread of SARS-CoV-2, the virus that causes COVID-19. At present, nucleic acid amplification methods represent the gold standard for the diagnosis of COVID-19 infection and together with clinical and radiological investigations, have improved the ability to correctly and rapidly diagnose a COVID-19 infection.

Material and methods. This paper analysis the major aspects of this topic published and were based on 65 bibliographic sources of authors across the country and abroad using Academic Google and PubMed databases (France, USA, Germany, Italy, Norway, Canada, Romania, Republic of Moldova etc).

Results. Entire world have faced the second wave of COVID-19 pandemic which was characterized by an increased number of infections and related deaths worldwide. Timely and accurate COVID-19 testing is an essential part of the management of the COVID-19 crisis. The study showed that the persons with signs or symptoms of COVID-19 should have diagnostic testing. The handling of samples must comply with the requirements of biosafety and biosecurity. All clinical specimens may contain potentially infectious materials. Precautions should be taken when handling specimens suspected or confirmed to be positive for SARS-CoV-2. Suspected and confirmed SARS-CoV-2 positive clinical specimens, cultures, or isolates should be packed and shipped as UN 3373 Biological Substance, Category B and handled in a Biosafety Level 3 laboratory using BSL-3 practices.

In the preanalytical stage, collecting the proper respiratory tract specimen at the right time from the right anatomic site is essential for a prompt, accurate molecular diagnosis of COVID-19. The tests used for COVID-19 can be classified into two groups. The first group contains tests that can detect the presence of the virus itself - RNA and antigen tests. The second group of tests detects the immune response of the body against the SARS-CoV-2 virus, i.e. they report on past or ongoing infection with the virus - antibody tests. The selection and interpretation of SARS-CoV-2 tests should be based on the context in which they are being used, including the prevalence of SARS-CoV-2 in the population being tested.

Conclusions. The ongoing, outbreak of COVID-19 globally has emphasized the importance of the laboratory diagnosis of human coronavirus infections in order to limit the spread as well as to appropriately treat patients who have a serious infection. In diagnosis of COVID-19 is recommend to take into account, the test to be used, the patient's medical history, the time of the suspicious SARS-CoV-2 exposure, the type of sample analyzed and interpretation of the result.

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FIRST NATIONAL POINT PREVALENCE SURVEY OF HEALTHCARE-ASSOCIATED INFECTIONS AND ANTIMICROBIAL USE IN ACUTE CARE HOSPITALS IN THE REPUBLIC OF MOLDOVA

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Keywords: *point prevalence survey, healthcare-associated infections, antimicrobial use.*

Introduction. Healthcare-associated infections (HAIs) present a major public health problem with an impact on morbidity, mortality and quality of life. On overage, up to 7% of patients in high-income countries and 10% in middle and low-income countries acquire at least one HAI. Deaths caused by HAIs account for about 10% of affected patients. At the national level data on the epidemiological situation and risk factors in HAIs are incomplete, against the background of underreporting, lack of active surveillance of HAIs, fragmented surveillance of antimicrobial resistance and antimicrobial use (AM) at the health facility level.

The objective of the study was to highlight the problem of HAIs and AM use in acute care hospitals, identification of risk factors and raising awareness of the problem among health-care workers and decision makers by using active epidemiological surveillance.

Material and methods. The methodology of the point prevalence survey of healthcare-associated infections and antimicrobial use in acute care hospitals (PPS) was patient-based, developed based on the European Centre for Disease Prevention and Control (ECDC) Protocol version 5.3/2016. The study was accomplished in 2018, on a sample of 67 hospitals, 546 wards and 10594 patients.

Data collection and validation were performed on paper at the health facility level, data analysis was accomplished using Helics.Win.Net software. The PPS study generated hospital, ward and patient indicators, including the prevalence of HAIs and AM use relative to risk factors.

Results. The prevalence of HAIs was 1.6%, with predominance of pneumonia (25%), surgical site infections (16.1%), lower respiratory tract infections (14.9%), urinary tract infections (11.3%). The highest prevalence of HAIs was recorded at the patients from intensive care units – 20.0%, the patients with invasive medical devices (intubated – 32.1%, central vascular catheter – 22.8%, urinary catheter – 15.2%), in patients with NHSN surgery (6.9%) and with severity of underlying illness (8.2%). In 72% HAIs were associated with the current admission, in patients with hospitalization period ≥15 days the prevalence of HAIs was 3.3% compared to 0.6% in those with a hospital stay of 1-3 days. The etiological confirmation of HAIs was reported only in 23,2% of cases, the causative agent being presented by *Klebsiella spp*. in 26%, *Enterococcuss spp*. – 18%, *coagulase-negative Staphylococci* – 14% and *P. aeruginosa* – 12%. *Klebsiella spp*. showed increased resistance to 3rd generation cephalosporins – 84.6% and to carbapenems – 46.2%. The prevalence of AM use was 42.7%, with an average of 1.3 antimicrobials administered to one patient. The most frequently used antimicrobials were the 3rd generation cephalosporins – 34.5%, broad-spectrum penicillins – 12.9%, the 1st and 2nd generation of cephalosporins – respectively 10.6% and 8.2%. Antimicrobials were more frequently prescribed for treatment (73.8%) and for surgical prophylaxis for more than one day – in 93.5%.

Conclusions. Data on HAIs and AM use in hospitals, obtained for the first time by implementing active surveillance based on the ECDC tool, are standardized and comparable at national and international level and allow the assessment of the situation in hospitals, obtaining evidence for infection prevention and control and AM stewardship programmes at local level, and arguing national policies.

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THE IMPACT OF TECHNOLOGY ON THE HUMAN BODY

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Keywords: *information technologies, health, prophylaxis, human body.*

Introduction. In 2020, the world faced the new type of Coronavirus, which led to a quarantine period that is still persisting today. In the Republic of Moldova, many institutions have closed due to the COVID-19 pandemic and started the online mode. Teachers and students had to double the time spent at the computer. Thus, the negative impact of information technology on the body has become more pronounced. It is highly important to educate the public on the correct use of technologies to prevent diseases.

Material and methods. The present study is based on the analysis of major aspects on the impact of information technologies on humans. The analysis was conducted on 21 researches from different universities around the world (Republic of Moldova, Romania, Russia, USA, etc.), published over the last 5 years.

Results. The data study proved that computer activity has a negative impact on brain development and functioning. This is due to the fact that the left brain hemisphere, which is suppressed when looking at the screen, does not develop normally, thus, resulting in deficiency of logical and analytical thinking, speech, sentence formation, writing and reading skills amongst the young people.

As a consequence, the prefrontal cortex that distinguishes the human brain from that of an animal one might be impaired and lead to low level of concentration, weak motivation and risky behaviors like bulimia, aggression and sexual urges. The visual and auditory stimuli occurring on the screen are so aggressive and following one another so fast, that they exceed the brain's ability to control them. The inevitable effects will result in the inhibition of important mental processes. Screen viewing is a critical factor in generating passive behavior. A decrease in overall alertness is proportional to the time spent viewing. There is an obvious decrease in perseverance, readiness and desire to actively solve the problem. Neurologically, the researchers refer this phenomenon to the brain activity or alpha rhythms, the cortical activity to which people get used during thousands of hours spent on screen viewing.

The first symptoms of excessive computer overuse are the stinging pains and blurred vision. Ophthalmologists say that people with myopia and farsightedness develop an earlier and a more pronounced fatigue.

Computer users may experience signs like tremor, itching, and finger tingling. Often these symptoms occur a few hours after the work is completed. The underlying cause of this syndrome is long duration of uniform hand movements, including fingers. In adolescence, the skeletal system also changes. The bone growth in children and adolescents might be affected due to a bad computer posture thus resulting in poor posture and scoliosis.

Conclusions. Information technology is essential in everyday life, thus, despite its multiple benefits, improper long-term use can lead to negative health consequences. Negative effects can be prevented, so users should be properly educated on both the effects causing health disorders, as well as the preventive means, appropriate workplace arrangement, break-period compliance and time of use.

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OCCUPATIONAL MORBIDITY AMONG HEALTHCARE WORKERS

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Keywords: *occupational diseases, risk factors, healthcare workers, occupational morbidity.*

Introduction. A healthcare profession is one of the most significant, difficult and responsible one, thus being one of the most vulnerable intellectual specialties associated with high levels of daily stress, both physical and emotional. Medical activity results in the health of the population, which is largely determined by the working conditions and the mental health of the medical workers. Health professionals refer to different specialties, having its own characteristics, depending on the work content and environment in which the medical staff is engaged.

Material and methods. A range of scientific publications on occupational morbidity among healthcare workers were studied. Bibliographic references were selected from the PubMed and Google Scholar databases. The following key words were used for data selection: occupational diseases, risk factors, healthcare workers, and occupational morbidity.

Results. Healthcare workers are daily exposed to different negative factors related to the working environment. However, a condition is termed as an occupational disease in three cases: it may arise as a result of work engagement; it is caused by physical, chemical, and biological risk factors, constantly present at work or due to overwork; when being exposed to long-term risk factors. There are numerous risk factors that can cause occupational diseases, for example, hazardous substances such as chemical and biological agents, including carcinogens; radiation, including ionizing radiation and ultraviolet radiation; physical factors, including vibration, noise, physical activity and sedentary work; occupational organizational and psychosocial risk factors such as night shifts and work stress.

The structure of occupational morbidity of healthcare workers includes diseases caused by biological factors, which are ranked first (50-70%) and might refer to occupational tuberculosis of the respiratory system and viral hepatitis. According to researchers, the second place (10-20%) belongs to allergic diseases, such as dermatitis, eczema, toxicoderma and asthma, which might result from contact with drugs, including antibacterial agents, vitamins, enzymes, disinfectants, latex and other chemicals. Much less frequently (3-9%), medical personnel are diagnosed with diseases caused by overloading of various organs and systems, including pathology of the musculoskeletal system, peripheral nervous system, visual analyzer, and circulatory system. The prevalence of illnesses caused by the exposure to physical factors, such as non-ionizing and ionizing radiation, as well as noise is less than 1%. Another study showed that nurses are more likely to develop diseases of the musculoskeletal, genitourinary and digestive system compared to doctors.

Conclusions. Due to the unfavourable working conditions, work content and exposure to environmental risk factors, any healthcare worker might potentially contract an occupational disease at the workplace.

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THE IMPORTANCE OF GLOBAL WARMING AND PUBLIC HEALTH LEGISLATION

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Keywords: *legislation, health, global warming.*

Introduction. The law is a legal tool of protection and trust of any sovereign country. The concept of health is regarded as a value without which man could not evolve. The environment directly affects our lifestyle and obviously our health. Different problems have arisen due to human negligence, the worst being the health-related ones. The increasing population and the material consumption have resulted into a strong negative impact on the environment. The excessive consumption of natural resources has led to an increase in greenhouse gas emissions, causing global warming over the last century and, ultimately, to global climate deregulation.

This phenomenon poses great threats on the environment, economic growth and global prosperity. The Republic of Moldova is no exception. Nowadays, global warming has a powerful impact on human health, thus the implementation and compliance to policies and regulations act as a link between population health and climate change. This issue should be addressed at the highest level of the country. The purpose of this research was to review health policies.

Material and methods. A descriptive research design was carried out on data obtained from the document analysis in health policy: laws, government decisions, orders, provisions and other normative acts retrieved from the websites of the Ministry of Health, Labour and Social Protection of the Republic of Moldova. 250 legislative documents were studied. The data reviewed on medical legislation was introduced within a table, having the following aspects studied: the global warming impact, the environment, overall health and hygiene measures. 27 bibliographic sources from Romania, Great Britain, Belgium, Poland, Czech Republic, and Ireland were analysed to justify the study of policy documents.

Results. Global warming is a current issue that must be considered at the highest level within a state viz. the law. Unfortunately, the issue of global warming and its impact on health is underestimated in our country, the Republic of Moldova. The development and implementation of the laws and legislative documents on the impact of global warming on health has been very poorly researched. Of the large number of laws and regulations enacted each year, very few are related to global warming and its negative health effects.

Based on the analysis of 29 laws, 3 of them indicated negative factors affecting the environment; out of 84 government decisions, there were identified restrictions regarding the environment and health; out of 200 orders, 10 orders stated the importance of environmental protection and measures to be undertaken.

Conclusions. The proper functioning of the legislature is the key solution in preventing health-related conditions, maintaining health and well-being among population, avoiding complications, promoting a healthy lifestyle in case humans are being affected by multiple factors, including the impact of climate change on the public health.

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WORKPLACE VIOLENCE AGAINST MEDICAL STAFF

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Keywords: *violence, workers, healthcare health.*

Introduction. Violence, whether domestic or at work, has always been a problem of human interaction with repercussions on how health professionals manage to care for people. If a few decades ago, violence in hospitals seemed to affect medical staff less often and respect for medical staff seemed self-evident, then aggression is often more encountered now and examples from the media are becoming more common. Doctors are those who save lives, only that they might become a subject to an increased risk. The capacity and effectiveness of the work of medical staff depend, largely, on their working conditions and risk factors. The activity of medical workers requires intellectual, neuro-emotional efforts of the analyser system, physical efforts with dynamic and static muscular overloads, vicious work positions.

Material and methods. The purpose of this research is to study the phenomenon of violence and identify the workplace risk factors on the health of medical staff. This descriptive study used and analysed the data retrieved from the international and national databases.

Results. Verbal and physical violence against healthcare workers have reached considerable levels worldwide and the World Medical Association has most recently defined violence against health personnel "an international emergency that undermines the very foundations of health systems and impacts critically on patient's health". The consequences of violence against healthcare workers can be very serious: deaths or life-threatening injuries, reduced work interest, job dissatisfaction, decreased retention, more sick leave days, impaired work functioning, depression, post-traumatic stress disorder, decline of ethical values, and increased practice of defensive medicine. Workplace violence is associated directly with higher incidence of burnout syndrome, lower patient safety, and more adverse events. A study conducted in Romania by CMMB in 2015 showed the magnitude of the phenomenon as follows: 85% of doctors said they had experienced verbal aggression and 10.2% physical aggression. Most doctors who have been victims of violence at workplace have not filed a complaint against aggressive patients or relatives who physically or verbally assaulted them. Violent manifestations often affect patients as well. The threat of using force or even brutality to obtain a privileged and unnecessary treatment deprives other patients of vital resources. There is a double pressure on doctors viz. the patients, who want the best possible treatment, without thinking about the fact that there may be more serious cases, which require more quick attention, and the public system, which requires resource planning so that the right to treatment of other patients is also protected. The most important element of reducing violence is the ability to communicate, however verbal aggressions are more common, since more than half of all cases are related to these situations. In this context, it is necessary to introduce communication courses for future doctors or nurses and education campaigns for the overall population, as well as legislation that provides harsher punishments for those who commit violence against healthcare workers engaged in public health service.

Conclusions. This study must be developed in order to achieve an overview regarding the problem of workplace violence against healthcare workers from the Republic of Moldova.

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PROMOTING KNOWLEDGE ON CLIMATE CHANGE

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Keywords: *health, extreme temperatures, climate change, heat wave, cold wave.*

Introduction. Climate change is a truly unique and unprecedented challenge facing humanity. The United Nations Framework Convention on Climate Change (UNFCCC) has defined it as "a climate change directly or indirectly attributed to human activity, which results in a change of the global atmosphere structure and which appears as something additional to natural climate variability observed over comparable periods of time ". By its nature, climate change has a global dimension, however, less developed countries are the most vulnerable ones because many of them will be severely affected and their ability to adapt is very limited. Unfortunately, in the Republic of Moldova, climate change is sometimes seen as a distant and irrelevant concept.

An effective tool for informing and promoting prevention behaviours among people is social media. Health literacy is essential for the promotion of individual health and influences the extent to which the public engages in preventive behaviours.

Material and methods The review of 17 selected bibliographic sources in GoogleScolar and PubMed allowed this study to be conducted. The words used in the search engine were: "knowledge promotion" and "climate change". After obtaining the results, those health-related sources were selected.

Results. Climate change has a significant influence on agriculture, aquatic resources, forests, the energy and transport sector, as well as, on human and animal health. There is a direct correlation between high or low air temperature rates and an increase in blood pressure, blood viscosity, heart rate or bronchoconstriction. The increase in the frequency and intensity of heat waves is associated with an increase in deaths and illness reports. The emergence of health risks from climate change implies the search for means of raising awareness within a particular field. One of the effective methods is the organization of information campaigns for the target groups of the vulnerable population.

The public information and awareness campaign, designed to prepare and inform the public about the possible impact of climate change on health and to provide adaptation measures to reduce possible negative outcomes, must be permanently designed and implemented. The dialogue with civil society, the private sector and the non-governmental sector is not only a source of information but also an educational means. The mass awareness on climate change issues should be carried out for various target groups through the media, thus public debates should be organized. School and university education programs should include information on the phenomena, causes, consequences, and the magnitude of the climate change impact as well as prevention and adaptation measures.

Conclusions. In the context of current climate changes, it is important for the Republic of Moldova to provide strategies of raising awareness regarding climate changes, as being among the vulnerable countries, in order to reduce the impact of these phenomena on the health of the population. The media policy should be complemented by provisions to support spots with social messages broadcasted on TV, radio, online media.

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THE IMPACT OF COMPUTERS ON CHILDREN'S HEALTH

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Keywords*: health, extreme temperatures, climate change, heat wave, cold wave.*

Introduction. In modern society, the old technological process is replaced by new technologies, namely, computerization. In 1990, computers formed the basis of the training system within the educational institutions at different levels. Using the computer, the teacher obtains additional possibilities for personality development, for the creative search and organization of work, as well as a unique possibility to communicate with colleagues from all over the world. The use of computers offers children the opportunity to work more easily with text documents and to attend lessons of outstanding scholars and teachers. The use of computers, in most cases, contributes to increasing success, to raising the effectiveness of independent work, offers new possibilities for creating, obtaining and strengthening professional skills. The computer provides a feedback of the learning process and its individualization, as well as allows searching for information from a wide range of sources. Considering the aforementioned, there is a question arising: does the computer have only positive effects on children? *The purpose of the study* was to analyze the bibliographic sources and to establish the impact of the computers on children's health.

Material and methods. The information presented is a literature review study of 34 sources (scientific articles, WHO, IPPC, WMO reports, monographs) from the Republic of Moldova, Romania, Ukraine, USA, Canada, and Portugal.

Results. Most of the bibliographic sources studied mentioned the development of the first stage of fatigue (excitation stage) in children who sit for a long time in front of the computer, which leads to irritability, nervousness, insomnia, decreased attention span. The computer can become a source of infection if you work on it every day without being cleaned at least once a week. The findings of some studies show that computer keys are soaked with bacteria, including *Staphylococcus aureus*, *Escherichia coli*. The sensation of "sand in the eyes", tears, blurred/double vision, stinging or pressure sensation, tired eyes, dry eyes, irritation, difficulty adjusting, headache, dizziness may be the warning signs of Computer vision syndrome. The tense position at the computer, the bent neck, the bent spine, the incorrect position of the hands and the way children hold their forearms on the table can affect their health, causing joint diseases. While working on the computer, the nerve endings of the finger pads are hit by constantly pressing the keyboard, thus, finger numbness, weakness and tingling occurs through the finger pads. This can cause damage to the joint and ligaments of the wrist, and later the disease can become chronic. Paresthesia is a pain, which appears on the dorsal side of the first three and a half fingers of the fourth finger, as well as on the distal palm are symptoms of Carpal tunnel syndrome. The sitting position at the computer can be complicated by venous stasis in the organs of the small pelvis and legs, varicose veins, and deep vein thrombosis. Dermatitis, changes in the cardiovascular system (especially increased frequency of heart contractions, blood pressure), etc. may also occur.

Conclusions. In order to benefit from the advantages of using a computer and to avoid unfavorable consequences, it is necessary to arrange correctly the workplace on the computer, to follow the recommended breaks and the activity time depending on the child's age, to consult regularly the ophthalmologist and other specialists to determine early signs on time.

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THE MAJOR RISK FACTORS FOR ROAD TRAFFIC INJURIES

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Keywords: *motor vehicle injuries, risk factors, car accident, prevention.*

Introduction. Injuries caused by road crashes are major public health problem because they are the cause of 98.8% of the total number of transport accidents. Annually, as a result of the global traffic, more than 1.3 million people die and 20-50 million are with no injuries and it is the main cause of mortality of young people aged 15-29. Road injuries ranks 8th after the leading causes of death and is forecast to rank fifth by 2030. This public health problem is widespread thanks to the social and economic sequelae that can influence the development and stability of countries. The negative social and economic impact for the people affected, for their families and for the country as a whole is very high. Children, pedestrians, cyclists and the elderly remain among those most at risk of road accidents.

Material and methods. A specialized search was conducted within the main international databases as: PubMed/MEDLINE, Google Scholar and Research Gate. The search was done by applying Boolean operators: road trauma AND accident, road trauma AND risk factors, "road trauma" AND "risk factors", (trauma OR risk factor) car accident. Considering the significant amount of information published on the topic, the search was limited to a period of 10 years (2010-2020). The inclusion criteria were the following: studies related to motor vehicle crashes and risk factors, original research, observational studies and systematic reviews, full-text articles, book chapters, papers presented at conferences written in English and published in open access. Data and references were extracted and systematized into results tables, including: author/citation, study design, assessments/data, limitations, key facts. Reported outcomes were compiled in narrative form.

Results. A flow diagram was created based on the inclusion criteria in this review in regard to the major risk factors and their contribution in motor vehicle injuries. From the total of 4535 results, 87 studies were included in the evaluation. Road injuries have been studied by many researchers and scientists both in the country and abroad. According to the evaluated data, the authors of the studies used different methods and obtained obvious data about road traumas and major risk factors. Among the main causes of unintentional motor vehicle injuries where underlined: excessive speed, alcohol consumption while driving, psychological trauma, drugs, unsupervised children. During the last years there is an increasing tendency of road injuries among children, and most of the road accidents with their involvement occur in May-September, between 11.00 and 18.00. Statistics confirm that 81% of all cases of road trauma in children are the result of their non-compliance with traffic rules. Among the most effective actions in reducing road injuries, being mentioned: activities aimed at sensitizing the general public in a safer traffic, communicating road traffic risks, raising driver's awareness, educating pedestrians for correct behavior on the streets; seat belt coupling; compliance with road traffic regulations.

Conclusions. There are many factors which contributes to road crashes and related injuries, but they can be prevented. The obtained ones further motivate us the need to study this topic in more depth, on separate age groups and to propose specific prevention measures for each actor involved in.

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CONTROVERSIAL VIEWS ON CLIMATE CHANGE

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Keywords: *climate change, global warming, global cooling, adaptation.*

Introduction. There have been a lot of discussions in recent years about climate change with an emphasis on global warming. Climate change is a change in the statistical distribution of meteorological patterns when this change lasts over an extended period. Scientists are actively working to understand past and future climate patterns, using theoretical observations and models.

The purpose of the research was to understand the direction of climate change towards heating or cooling, in the vision of scientific researchers, in order to develop and implement the action plan for the healthcare system.

Material and methods. The research is a descriptive analysis of the controversial views of scientists. To conduct the research, scientific articles were searched on the website of the social scientific network ResearchGate, using the following keywords: climate change, global warming, global cooling, and adaptation. There were selected 5 articles published in 2020.

Results. Researchers present controversial evidence regarding climate change. Do controversial opinions focus on the question of climate warming or cooling?

Some scientists claim that the planet is threatened by global warming. The United Nations Intergovernmental Panel on Climate Change has estimated that global temperatures will rise by one degree Fahrenheit by 2011 and by 2 degrees Fahrenheit by 2038. The BBC states: „Over the past few hundred years, there has been a steady increase in the numbers of sunspots, at the time when the Earth has been getting warmer. The data suggests solar activity is influencing the global climate causing the world to get warmer." For the last 35 years, the sun has shown a cooling trend. However, global temperatures continue to rise. If the sun's energy decreases as the Earth warms, then the sun cannot be the main temperature control factor. The sun's energy fluctuates over a cycle of about 11 years. The energy changes by about 0.1% on each cycle. If the Earth's temperature were controlled mainly by the sun, then it should have cooled between 2000 and 2008. NASA and climate scientists around the world have said, however, that the years since 1998 have been the warmest in the world.

Other scientists say a new ice age awaits us. "An eminent Mexican geophysicist (Victor Manuel Naumovich Velasco Herrera) says that the world may be on the verge of an eighty years cold period similar to the 'little ice age' experienced by Europe from 1300 to 1800 A.D.", a period in which the activity of sunspots decreased significantly.

Conclusions. In the Republic of Moldova, there are few studies on the tendencies of climate change towards heating or cooling. The existing ones demonstrate a greenhouse effect both in the short and long term. Even if all indicators show that global warming is still happening, the idea of global cooling should not be neglected. Whatever the trends, the consequences can be prevented by adapting. Adaptation measures must be carried out at different levels: from the governmental, ministerial to the individual level, as well as from the general within the country to the local level of the administrative system.

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HEALTH CONSEQUENCES OF EXTREME TEMPERATURES DRIVEN BY CLIMATE CHANGE

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Keywords: *health, extreme temperatures, climate change, heat wave, cold wave.*

Introduction. Climate change and climate variability, particularly of the weather patterns, affect the environmental determinants of health such as clean air, food, water, shelter and security. At the same time, climate change, along with other factors, might greatly affect human health and well-being. One of the 10 major health impacts of climate change publicly reported by WHO are the extreme temperatures. This third effect suggests that short-term intense fluctuations of weather can seriously affect health, causing heat stress (hyperthermia) or excessive cooling (hypothermia), which might particularly increase the mortality rate due to cardiovascular and respiratory diseases. Episodes of extreme temperatures pose a threat on the health systems. In terms of methodology, the most important study aspects on the impact of extreme temperatures on health status is to determine the temperature threshold, when climatic conditions become fatal for population. Many studies confirm that temperature threshold should be based on the human body's response to extreme heat or cold, resulting in increased number of deaths and overall morbidity due to certain diseases, as well as due to an increased need for urgent medical assistance.

Material and methods. The present study is a literature review of 34 sources (scientific articles, WHO reports, IPPC, WMO, monographs) from the Republic of Moldova, Romania, Ukraine, USA, Canada, and Portugal.

Results. Extreme temperatures are both extremely high (heat waves) and low temperatures (cold waves).

A heat wave is defined as a period of marked unusual hot weather over a region persisting for at least two consecutive days. They occur all over the globe, although might manifest differently depending on the location. The impact of heat waves on public health depends on the level of exposure (frequency, severity and duration), the number of people exposed to this factor, and the individual's sensitivity. The direct effects of exposure to excessive heat are heat exhaustion and hyperthermic shock, manifested in profuse sweating, pallor and clammy skin, excessive thirst, nausea, weak pulse, headache, blurred vision, exhaustion, weakness, muscle spasms, etc. Extremely high temperatures often lead to death of patients suffering from cardiovascular and/or respiratory diseases, especially among the elderly people.

A winter cold wave is a period of unusually cold weather over a region, which lasts at least two consecutive days. Exposure to cold can lead to a variety of cold-related illnesses, common symptoms and signs, as well as injuries and accidents, including circulatory, respiratory and cardiovascular disorders. The unfavourable cold outdoors conditions can lead to multiple injuries resulting from slipping and falling. The impact of cold weather on the health sector involves hospital and emergency facilities, primary health care services, mental health care, public health protection and immunization and social care companies.

Conclusions. Many of the adverse health effects of hot/cold weather can be prevented by individual action or the actions of health professionals, including government.

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THE MYTHS AND REALITIES OF COVID-19: A PERCEPTION STUDY FOR WEST AFRICA

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Keywords: *COVID-19, disease, culture, underdevelopment.*

Introduction. The outbreaks of Coronavirus Disease, popularly known as COVID-19 in November 2019 created new dimension in the way people live, relate and interact across the world. Despite the fact that this disease caused a lot of deaths and illnesses in many countries, many people still doubt its existence. Public health experts have explained that the infectious disease transmitted between animals and humans, and is caused by new form of coronavirus (SARS-CoV-2) which had been previously identified in human beings and first reported by World Health Organisations (WHO) in Wuhan, China on 31st December, 2019. Since then, the virus continues to spread across the world with reported cases in almost all countries that carry out some tests for their citizens. Many of these cases of transmissions have been reported in indoor locations such as restaurants, places of worship, schools, hotels, nightclubs, airports, game centres, parks and markets.

Material and methods. This study looks at the myths and realities of the virus' existence through a perception study in selected countries of West Africa. The study was qualitatively induced with data generated from interviews with respondents in Nigeria, Cameroon and Niger.

Results. The study revealed that despite the scientifically proven evidence on the existence of COVID-19, large percentages of people do not agree with the existence of the virus in all the selected countries. Culture played huge role in this perception, as the study revealed that COVID-19 is still a myth in West Africa with citizens either disbelieving in it entirely, considered it a European based disease or less deadly compared to the existing problems in the continent. The high level of corruption driven by bad governance has made citizens lose trust in what government advocates for, or laws it introduces in relation to those things. The high level of poverty and illiteracy make people think about entirely different problems other than COVID-19. Many do not consider as a killer disease due to hunger and poor state of living. There is further a misperception in some communities of the selected countries that the virus does not catch youths and teenagers, but old people only. Some citizens also believe that the hot sun in some parts of the countries will not allow the virus to survive, or infect anyone as the sunlight is a natural cure for such viruses. Nevertheless, there has been high level of awareness on social media, radio stations and television stations, as well as the use of posters, bill boards and physical community engagements organised by civil society groups, development organisations and government agencies. Many sets of meetings have also been organised between and among actors and stakeholders in development space in an effort to avert the spread of the virus.

Conclusions. The study concluded therefore that COVID-19 remains a myth in West Africa till date, and requires huge effort to overcome this. Changing this narrative will require addressing the root challenges which includes investing hugely in human capital development.

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PREVENTIVE MEASURES OF RABIES IN WILDLIFE IN THE REPUBLIC OF MOLDOVA

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Keywords: *rabies, fox, vaccine, baits, vaccination, incidence.*

Introduction. Rabies is a zoonosis of virus origin with a lethality rate below 100% in animals and humans. The natural reservoir and the main factor in the spreading of the disease in the Republic of Moldova are represented by the foxes. Prophylaxis of the disease in particular is focused on vaccinating domestic carnivores (dogs and cats) as well as wildlife animals (foxes, raccoons, ferrets, etc.). The manual method, traditionally used in the Republic of Moldova to prevent rabies in wildlife, usually has a low rate of immunization of wild carnivores. This led to the development of a strategic plan for vaccination of wild animals using combined methods, manually and the distribution of vaccine baits by plane, a measure used in the bilateral program between the Republic of Moldova and Romania, which was implemented in 2020.

The main topic of the proposed investigations was to establish the epidemiological situation of rabies in wildlife, as well as the analysis of specific prophylaxis measures of rabies in wildlife animals of the republic.

Material and methods. The research material was the confirmed positive results of rabies virus obtained from the Republican Veterinary Diagnosis Center, as well as the strategic action plan approved by the National Agency for Food Safety on surveillance and eradication of rabies in the Republic of Moldova. At the same time, there were analyzed the cases of rabies in wildlife during the last 5 years and the dates of implementation of the national program regarding the methods of vaccination of wildlife animals in the Republic of Moldova.

Results. In the Republic of Moldova, the studies on rabies cases in wildlife show that despite the annual vaccination of foxes in forest strips, the incidence of rabies in wildlife ranges from 12 to 25% of the total number of positive cases confirmed annually in the veterinary laboratory at national level. In 2020, due to the bilateral program between the Republic of Moldova and Romania, the vaccination against rabies of wildlife animals was carried out via combined, manual and plane approaches, lighters with rabies vaccine being distributed from the plane in area of 50 km on the border with Romania ("TAMPON" area).

Vaccination was performed in 2 stages, in spring and autumn, when the ambient temperature ranges between 4 and 15°C above zero. A total of 1,112,301 baits with vaccines were distributed by plane and 147600 manually. The distribution of vaccine baits by air was 25 baits /km2. Epidemiological study data showed that combined methods of vaccination reduced the number of rabies cases in foxes from 29 cases in 2015 to 14 cases in 2020, or the incidence of positive cases decreased by 48%.

Conclusions. (i) Foxes are the main vector in maintaining and spreading the outbreaks of rabies in both wildlife and domestic animals, which should be considered as a basic element in eradicating rabies at the national level. (ii) The use of the mixed method of vaccination among wildlife animals (manual and by plane) has shown a higher efficiency, which allowed the reduction of rabies cases in foxes up to 48%.

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ACTIVITY OF THE OUTPATIENT CENTER OF THE MINISTRY OF DEFENSE IN COVID-19 PANDEMIC CONDITIONS

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Keywords: *Public Health Emergency, Outpatient Center, SARS CoV-2.*

Introduction. On January 31, 2020, the World Health Organization declared a Public Health Emergency of International Interest caused by a new type of Coronavirus infection. By the Order of the Minister of Health, Labor and Social Protection no. 188 of February 26, 2020, the Algorithm of measures regarding the supervision of healthy persons and persons with clinical signs of disease was implemented. On the basis of the above-mentioned order, by order of the Minister of Defense in March 2020 was implemented „Instruction on measures to reduce the risk of spreading cases of infection with the new type of Coronavirus (COVID-19) in the National Army". In addition to the basic function, Outpatient Clinic is response to conduct medical examination for conscript soldiers during the accommodation period and to conduct pre-and post-deployment medical examination for International Peacekeeping Operations/ Missions. The evolution of the epidemiological situation in the Republic of Moldova and in the National Army created a necessitation to adjust the activity of the Outpatient Center of the Ministry of Defense in conditions of COVID-19 pandemic.

The purpose of the study is based on the recommendations, regarding the prevention and control of the spread of the SARS CoV-2 virus, to develop proposals for strengthening the capacities of the Outpatient Center, in accordance with the pandemic situation caused by the SARS CoV-2 virus.

Material and methods. The study is based on the narrative synthesis of bibliographic sources, which include international and local references, normative basis and statistical data. The materials include the recommendations of the World Health Organization, Order of the Ministry of Health, Labor and Social Protection, and decision of the Extraordinary Public Health Commission.

Results. By Order of the Minister of Defense no. 155/2020, "Instruction on how to address the military for medical assistance in case of suspect or patient with" Coronavirus of the new type COVID-19" was implemented. The Outpatient Center shifted to a special activity regime under COVID-19 pandemic conditions. Special medical team was created to collect samples for testing suspects/patients within medical institution and at home. Patients with positive test results and minor clinical signs were given treatment at home under daily supervision. Military individuals with severe signs were transported to the Military hospital of the Ministry of Defense by ambulance or Emergency Service „112". The newly recruited soldiers underwent additional medical examination in the first days after enrolment. In September 2020, the medical examination was carried out on the students from the Military Departments. During the pandemic, medical examination was carried out for military personnel of the National Army for participation in International Peacekeeping Operations (IPKO). Mention medical examinations to assess fitness for military service in IPKO was organized in compliance with measures to prevent and spread the infection. In March 2021, based on the Order of the Ministry of Health, Labor and Social Protection no. 93 of February 5, 2021 on the implementation of the National anti-COVID-19 immunization Plan, an Outpatient Clinic was created as a vaccination center for the anti-COVID-19 immunization of personnel of Ministry of Defense and the civilians registered with the family doctor from clinic.

Conclusions. For the efficient organization of the activity of the Outpatient Center under pandemic conditions, it is necessary to adjust: (1) Rules of supply with material and medical means Medical Treatment Facility of Ministry of Defence, (2) Medical Support Plan in Operations.

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PREVENTION OF ACUTE NON-PROFESSIONAL CHEMICAL POISONINGS IN THE REPUBLIC OF MOLDOVA

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Keywords: *poisonings, affected, deaths, prevention measures, training.*

Introduction. Chemicals are present in the national economy and bring benefits on which modern society is completely dependent, but they can also present risks if they are not correctly managed. Recently, in the world, the chemicals have significantly increased in use, especially household products used in daily life, which poses a potential risk to public health, caused by their irrational use. An important aspect in the prevention of acute non-professional chemical poisonings (ANPCP) is the awareness of the population about the dangers of inappropriate use of chemicals and the diseases they can generate.

Material and methods. A descriptive and retrospective study was performed. Data from the Statistical Form f. 50-san "Statistical report on health promotion and health education", f. 18-san. "Statistical report on state surveillance and control of public health in the district, municipality", Model report on the organization of the National Week for combating of acute non-professional chemical poisonings were analysed.

Results. Statistical data analysis showed that, since 2013, the Republic of Moldova, together with several states, have organized International Campaigns to prevent lead poisoning. At the same time, since 2018, was carried out National Prevention Week of acute non-professional chemical poisonings by public health specialists, Ministry of Health, Labour and Social Protection (MHLSP), territorial medical institutions together with specialists of the Ministry of Education, Culture and Research.

In 2021, according to the joint Order of MHLSP and the National Agency for Food Safety no. 237/127 of 19.03.2021, for the first time was organized the National Health Promotion Week through the rational application of phytosanitary products. Several events (seminars, public lessons, round tables) were organized during this week, aimed at public informing and raising awareness on the health effects of chemicals exposure, by increasing the level of knowledge and raising society's awareness on avoidance of using toxic chemicals, especially veterinary drugs in treatment of humans.

Thus, more than 2,000 people were informed and trained on how to properly handle and store chemicals, as well as on measures to prevent chemical poisonings etc. The assessed statistical data established that, in the country, a total of 30,323 cases of ANPCP were registered during 2012-2020, including 912 deaths. Most cases occurred in 2013, of which 6292 were affected and 219 led to death. Since 2014, it can be noted a decreasing trend of cases, when were reported 5619 poisonings, reaching 2145 cases in 2018 and 1494 cases in 2020.

Conclusions. The organization of Health Promotion Weeks in chemical risks field, of has a positive impact on population health, with a decrease in the level of morbidity associated with chemicals products. The cases of acute non-occupational chemical poisonings has decreased from 6292 cases in 2013 to 1494 cases in 2020. With the aim to improve the situation in this field and increase the level of knowledge of the citizens, it is necessary to continue the health promotion measures in this field.

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FULL GENOME SEQUENCE OF THE FIRST SARS-COV-2 ISOLATES DETECTED IN THE REPUBLIC OF MOLDOVA

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Keywords: *SARS-CoV-2 mutations, COVID-19 pandemic, full genome sequencing.*

Introduction. Since the COVID-19 outbreak in late December 2019, more than 290 043 cases and 6713 deaths have been reported in the Republic of Moldova as of 27th of September 2021. The paucity of in-depth knowledge of the risk factors for severe COVID-19, insufficient diagnostic tools for the detection of SARS-CoV-2, absence of specific and effective drug treatments as well as the absence of a best measure to monitor emerging pathogens like SARS-CoV-2 led to a major burden on health care and economic systems across the world. As SARS-CoV-2 continues to acquire genetic changes over time during this pandemic, the full genome sequencing and identification of viral variants must continue.

This study aimed to perform whole-genome sequencing of SARS-VoV-2 isolates from Moldova and to provide a 'real-time' overview of the viral genotypes circulating in this geographical area. Suspected cases were screened for SARS-CoV-2 as per the advisory of the Ministry of Health.

Material and methods. 4 nasopharyngeal swabs were collected in June 2020. Samples were obtained from patients aged between 20 and 60 years old, residing in the Republic of Moldova. All samples from COVID-19 patients were collected from individuals with mild and severe COVID-19 symptoms and confirmed by real-time reverse transcription-polymerase chain reaction targeting the envelop (E) and nucleocapsid (N). The RNA samples were sequenced using an Illumina MiSeq sequencer according to standard procedure developed previously. The metadata was created and the sequences were deposited on GISAID international repository.

Results. Four patients from different geographic regions of the Republic of Moldova were confirmed positive for SARS-CoV-2. Complete (29,900 nucleotides, 29,886 nucleotides, 27,179 nucleotides, 29,867 nucleotides) genomes were obtained. Phylogenetic analysis showed that the Moldovan sequences belonged to different clusters. EPI_ISL_516935 (GISAID accesion ID) belongs to clade G and EPI_ISL_516934, EPI_ISL_516936, EPI_ISL_516938 belong to clade GR. These clades are prevalent in EU. All isolates showed typical mutation (Spike D614G) for G clade. Three genomes showed mutations on nucleocapsid protein, the G204R which is specific for GR clade. We also observed other amino-acids substitutions (NS3 V90F, NSP2 G339S, NSP3 D218E, NSP3 V1243A, NSP12 P323L, Spike E1202Z, Spike L763V, NS7a E95Z, NSP3 N1785D, Spike G769V, N P151L, N R203K, NSP12 R457C, NSP13 A379V, NSP15 N4S NS3 S165F, NSP2 L410F), mutations that are less frequent.

Conclusions. The four SARS-CoV-2 sequences obtained from Republic of Moldova represent two different introductions into the country. The genetic heterogeneity is as noted globally. The Spike D614G and N G204R has a rapid spread in the pandemic. Continuous monitoring and analysis of the sequences of new cases from Republic of Moldova and the other affected countries would be vital to understand the genetic evolution and rates of substitution of the SARS-CoV-2.

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THE INFLUENCE OF BIOLOGICALLY ACTIVE COMPOUNDS ON OXIDATIVE STRESS MARKERS AND ANTIOXIDANT SYSTEM

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Keywords: *chemical compound, biological compound, oxidative stress markers, antioxidant system.*

Introduction. The development of degenerative processes relates to the presence of excessive harmful free radicals, which cause damaging oxidative processes within the body. Various defense mechanisms protect cells from the destructive potential of free radicals. These include antioxidant enzymes: superoxide dismutase, catalase, glutathione S-transferase, glutathione peroxidase and glutathione reductase. These enzymes play a significant role in reducing oxidative stress, by preventing the spread of harmful free radicals.

Material and methods. The present study used the {N- (prop-2-en-1-yl) -2 - [(pyridin-2-yl) -methylidene] hydrazine-1-carbothioamide} aquacupper (II) chemical compound and the MX1 extract – a biological compound, which is a pigment of Myxoxanthophyll carotenoids, obtained from Spirulina platensis biomass at a concentration of 0.214 mg/ml in 80% aqueous solution of ethyl alcohol.

The study also determined both the separate and combined effects of chemical and biological compounds on the spontaneous production of biochemical parameters, which was carried out *in vitro* according to the method described by Rîjcova S. et al. with some modifications. To assess the oxidative stress, the malondialdehyde (MDA) concentration and the advanced oxidation protein products (AOPP) were determined, whereas the antioxidant system was assessed via the identification of the activity of superoxide dismutase (SOD), total antioxidant (TAA), glutathione-S-transferase (GST), catalase (CT), glutathione peroxidase (GPX) and glutathione reductase (GR). The blood tests were collected from 10 healthy people aged 25 to 35 years.

Results. The research findings showed that the biological compound under study had positive effects on all the studied parameters, reducing both the MDA, µM/L (p=0.0085) and AOPP values, µM/L (p=0.018) on the one hand and increasing the potential antioxidant (SOD, u/c (p=0.0035), CT, µM/L (p=0.0029), TAA, µM/L (p=0.0059), GST, nM/sL (p=0.024), GPX, nM/sL (p=0.0041) and GR, nM/sL (p=0.0064)) on the other hand. The tested chemical compound exhibited negative effects, which led to higher MDA, µM/L (p=0.0085) and AOPP, µM/L (p=0.027) values. However, the chemical compound favored the antioxidant system (SOD, u/c (p=0.0035), CT, µM/L (p=0.0248), TAA, µM/L (p=0.0173), GST, nM/sL (p=0.023), GPX, nM/sL (p=0.0365) and GR, nM/sL (p=0.0076)). While studying the activity results of the tested combined compounds, we found that the biological compound determines positive effects, particularly on the oxidative stress markers, though no expected effect potentiation was found.

Conclusions. Based on the obtained research findings regarding the biological compound with optimal effects on the studied systems, further relevant studies should be carried out. At the same time, the obtained results require confirmation under *in vivo* study conditions, thus not allowing concluding on the quantitative effect of the investigated substances, the argument being the relatively small number of respondents, determining wide confidence intervals and being one of the study limitations.

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THE LABORATORY DIAGNOSIS OF LYME DISEASE

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Keywords: *lyme disease, neuroborreliosis.*

Introduction. Lyme disease, the most common vector-borne illness, is usually caused by infection with the spirochete Borrelia burgdorferi. Worldwide, higher prevalence is noted in Central, Eastern, and Northern Europe, the US and Canada, and parts of Asia. The disease is transmitted to humans via tick bites. The typical symptoms include fever, headache, fatigue, sore muscles and joints, and a characteristic skin rash called erythema migrans. Currently, the majority of the international guidelines recommend the testing of blood for evidence of antibodies against the Lyme disease bacteria using the blood sample and fluid from the central nervous system. The basic Lyme test is called an enzyme-linked immunosorbent assay (ELISA). Therefore, every positive or uncertain Lyme ELISA result needs to be confirmed with Western blot test. Reducing exposure to ticks is the best defense against Lyme disease and other tick-borne infections.

Material and methods. The objective of the study was to carry out an analysis of the literature related laboratory diagnosis of Lyme disease and was based on 79 bibliographic sources of authors across the country and abroad using Academic Google and PubMed databases for articles published from 2012-2021.

Results. This review details the risk factors, clinical presentation, diagnoses treatment, and prophylaxis for the disease. The prime season for tick-borne disease begins when weather becomes warmer, people enjoy outdoor activities in woody or brushy areas and the ticks begin to be more active. People in certain occupations, for example, farm workers, are at higher risk. Typically, the tick must feed for at least 36 hours for transmission of the causative bacterium, Borrelia burgdorferi.

The diagnosis of Lyme disease is based on symptoms, physical findings, the possibility of being exposed to areas where infected ticks could be present and laboratory testing.

In recent years the issue of the diagnosis of this infection has been highly publicized. Laboratory tests check for antibodies in the blood however Lyme disease antibodies may first appear six to eight weeks after a person has been bitten by a tick. A good occupational, travel, and lifestyle history is important when assessing patients. Early laboratory tests may not detect the disease and could slow diagnosis. The disease is associated with specific clinical features: early localized infection, with erythema migrans, fever, malaise, fatigue, headache, myalgias, and arthralgias; early disseminated infection, with neurologic, musculoskeletal, or cardiovascular symptoms, multiple erythema migrans lesions and late neurologic manifestations may occur.

Lyme disease is most commonly diagnosed by a screening test called ELISA, then confirmed using a western blot test, but in some cases also by testing a sample of the skin lesion by nucleic acid testing or culture. Some laboratories can analyze the tick to see if it's carrying Lyme bacteria. Lyme disease prevention measures described in the majority of the analyzed studies are the following: use insect repellent, remove ticks immediately with fine-tipped tweezers, apply pesticides to lawns and other high-risk areas, properly maintain yard or land, walk in the center of hiking trails and wear light-colored clothing to make it easier to find ticks on your body.

Conclusions. Prompt diagnosis and early treatment are extremely critical for Lyme disease because it helps reduce the risk the development of further symptoms. Preventive measures should be emphasized to patients to help reduce risk.

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THE LINK BETWEEN INFERTILITY AND WEIGHT. GENDER DIFFERENCES

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Keywords: *infertility, fecundability, obesity.*

Introduction. Infertility is defined as a couple's inability to conceive after one year of frequent, unprotected intercourse. In the case of women that are older than 35, the period is shortened to 6 months. In spite of relatively unchanged rates of infertility, assisted infertility is in substantially more demand. This phenomenon could be explained by the delay of childbearing to a later age. The factors that play a considerable effect in this issue include: age, conditions that can be of acute or chronic nature, exposure to environmental and occupational toxins, poor lifestyle choices, infectious and genetic diseases, and specific reproductive disorders that can affect either the man or woman attempting to conceive.

Material and methods. This paper analyzes the major aspects of this topic published and were based on 50 bibliographic sources of authors across the country and abroad using Academic Google and PubMed databases (France, USA, Italy, Norway, Germany Republic of Moldova etc.).

Results. The prevalence of obesity has risen steadily in the past decades and it has been identified as a contributor to male infertility for the reason that it leads to a decline in semen parameters. A 2010 study identified a significant positive correlation between increased body mass index (BMI) and deficiency of sperm cells in semen. Not only that but also correlation with abnormal sperm morphology, LH, serum leptin while also a significant negative correlation with sperm concentration, sperm motility and serum T. In the same year another study was published that did not find statistically significant correlation between BMI and semen quality in subfertile couples. Two years later two semen parameters were found to be detrimentally affected by a high BMI and central adiposity: sperm concentration and total motile sperm count. Consistent results were reported by researchers from France: Semen volume, semen concentration, total sperm count and progressive motility were found to be decreased in males with increased BMI. In females both overweight and obese BMIs have been associated with decreased fertility. The pathophysiology involved regards ovulatory dysfunction and metabolic changes. A 2016 study with the goal to evaluate the association between adiposity, physical activity, and fecundability concluded that decreased fertility was associated with various measures of overall and central adiposity. Higher waist-to-hip ratios and circumferences were associated with lower fecundability. The same effect was observed in individuals that presented a tendency to gain weight in the chest/shoulders and waist/stomach relative to hips/thighs. The detrimental effects obesity has on ovulatory function been known in 1994, changes being observed in moderately overweight as well as underweight women. Insulin resistance that results in hyperinsulinemia may, though this is not a rule, lead to hyperandrogenism, which causes the known triad of hirsutism, dysfunctional uterine bleeding, and infertility.

Conclusions. While not extensively studied the correlation between male obesity and infertility has yielded conflicting results that need further study. Weight reduction can correct the hormonal imbalance but the effect of weight loss on semen parameters and pregnancy rate has not been studied. Evidence points at the detrimental effects obesity has on female fecundability and on the health of the offspring. Thus, women and men who wish to conceive are counseled about the importance of achieving and maintaining a normal weight.

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MICROBIOLOGY AND EPIDEMIOLOGY OF SURGICAL SITE INFECTIONS

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Keywords: *surgical site infections, antimicrobial stewardship programs.*

Introduction. Surgical site infection (SSI) is a major patient safety concern in hospitals, with implications on patient morbidity, mortality and increased health costs. The analyzed studies demonstrated that the patients with SSI are twice as likely to die, 60% more likely to be admitted to the intensive care unit, and more than five times more likely to be readmitted to the hospital after discharge. The pathogens causing SSI may be caused by endogenous or exogenous origin and are typically similar to other healthcare-associated infections. Consequently, most SSIs are caused by *S. aureus*, the coagulase negative staphylococci, enterococci and *E. coli* Epidemiological findings demonstrated that the most SSIs can be attributed to a variety of factors which can be classified into patient-related, procedure-related and others.

Material and methods. This paper analyzes the major aspects of this topic published last 10 years and were based on 98 bibliographic sources of authors across the country and abroad using Academic Google, PubMed databases (USA, France, Italy, Germany Canada, Romania, etc.).

Results. The authors of recent studies have defined the surgical site infections as infections occurring up to 30 days after surgery (or up to one year after surgery in patients receiving implants) and affecting either the incision or deep tissue at the operation site.

Despite modern surgical techniques, use of prophylactic antibiotics pre- and postoperatively and other preventive measures, SSI remains a burden for the patient and health system. Most SSI may be caused by endogenous organisms within the patient's body that are exposed during surgery that depend on surgical site (ex. the risk of developing SSI from enteric Gram- bacteria increases with surgery on the gastrointestinal tract). SSI caused by exogenous bacteria are related with contaminated surgical instruments, operating room surfaces, air, personnel.

It was found that periodic surveillance and feedback for surgeons on SSIs rate and associated factors can decrease up to 50% of cases.

Most studies demonstrated that the SSIs can be attributed to risk factors inherent to the patient and procedure and other (ex. volume of surgeries performed in the department, the season, indications for surgery, the working environment in the operation room.

Antimicrobial stewardship programs (ASPs) are essential to reduce SSI rates and antimicrobial resistance. The microbiology department needs to establish the local resistance patterns and to identify the most common organisms likely to be encountered. It should be every practitioner's priority to use antibiotics judiciously and to de-escalate from empiric antibiotics as soon as the sensitivity results are available. Surveillance and control of SSI assume standardized definitions, rapid method of diagnoses, effective surveillance programs and stratification of the SSI rates according to risk factors associated with the development of SSI.

Conclusions. SSIs remain a burden to postoperative patients and that implementation of interventions aimed at promoting appropriate and evidence-based use of antimicrobials are needed. Effective management of SSI requires a team approach including the patient, ward staff, reception staff, nursing staff, surgeons, ICU clinicians, cleaners, maintenance team etc.

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THE BURDEN OF MULTI-DRUG RESISTANT UROPATHOGENS

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Keywords: *multi-drug-resistant uropathogens, urinary tract infections.*

Introduction. Urinary tract infections (UTIs) are among the most frequent infectious diseases affecting humans, thus representing an important public health problem with a substantial economic impact. The reviewed literature highlighted that the causative agents are gram-negative organisms from the family *Enterobacterales*. In recent decades the emerging threat of resistant Gram-negative bacteria to beta-lactams, aminoglycosides, sulfonamides, and fluoroquinolones in urology became a major global concern. The results of many scientific papers have demonstrated that the knowledge of local and regional antimicrobial susceptibility patterns is one of the ways to improve antibiotic prescription.

Material and methods. A bibliographic review was conducted to identify the published studies between 2010 and 2020. This present paper used the literature search strategy, including PubMed, Scopus, Web of Science, Springer open and Google Scholar databases of the relevant publications on multi-drug resistant uropathogens. Thereby, searching was performed using the keywords on multi-drug resistant uropathogens and urinary tract infections to identify evidence published at international and national level.

Results. UTIs caused by resistant gram-negative bacteria are becoming increasingly prevalent and now constitute a serious threat to public health worldwide due treatment difficulties associated with high morbidity and mortality rate. Authors demonstrated that *Enterobacterales* are frequently isolated from samples of patients with UTIs. Also, studies demonstrated that E. coli remains the most common causative agent followed by *K. pneumoniae, P. mirabilis, E. faecalis, S. saprophyticus*. Due to a widespread and/or inappropriate use of antibiotics, the antimicrobial resistance is growing at an alarming rate, which develops in pathogens commonly causing UTIs. In clinical practice, it is not uncommon to encounter organisms that are resistant to multiple antibiotics, or even to all the antimicrobial agents available. The development of multidrug-resistant (MDR) strains, which are resistant to three or more classes of antimicrobials, or extensively drug-resistant (XDR) strains, which are resistant to all but one or two classes of antimicrobials, is a cause of major concern. The culture-based diagnosis of UTIs presents several challenges to clinical microbiologists, physicians and health care system. Bacteriological tests are necessary to make the diagnosis and provide specific information regarding the identity and the antimicrobial susceptibility pattern of pathogens. Most of the reviewed studies indicated that the culture technique aids to identify uropathogens, selection of antimicrobial preparation for treatment but the accurate interpretation of the results requires clinical information that is usually available only to the clinician. When analyzing the relevant data, there was noticed that Gram-negative resistance to UTIs is associated with severe and serious consequences such as recurrence, pyelonephritis followed by sepsis, renal damage etc. Therefore, the monitoring of pathogen resistance patterns is very important and help clinicians to develop guidelines for establishing a proper empirical therapy for UTIs while awaiting culture sensitivity reports.

Conclusions. UTIs caused by Gram-negative pathogens that are resistant to many and, in some cases, to all available antimicrobial agents, are becoming increasingly common and difficult to treat. Consequently, UTIs caused by multi-drug resistance bacteria require a multifaceted approach such as the rationale use of current antimicrobials, improved diagnostics and surveillance, better adherence to basic measures of infection prevention, development of new antibiotics.

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BOTULISM: LIFE-THREATENING ILLNESS

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Keywords: *C. botulinum, botulism, botulinum neurotoxin.*

Introduction. Botulism is a potentially fatal syndrome of diffuse, flaccid paralysis caused by botulinum neurotoxin (BoNT), produced by the bacterium *Clostridium botulinum.* The toxin is produced as the bacteria multiply; the bacteria multiply under anaerobic and mildly acidic conditions. The neurotoxin BoNT is considered the deadliest toxin known due to its high potency and lethality. Based on the different serotypes known today, a classification of serotype variants termed subtypes has been proposed according to sequence diversity and immunological properties. Authors described seven types of botulinum toxins (A–G), but human botulism is primarily caused by types A, B, E, while types C, D and E cause illness in other mammals, birds and fish. Most studies demonstrated that antitoxin should be administered as soon as possible after a clinical diagnosis. There is no vaccination to protect people against botulism. The effective prevention measures of foodborne botulism are based on good practice of food products preparation and compliance with basic hygiene rules.

Material and methods. The purpose of the study was to find relevant publications on the etiology, epidemiology, diagnostic methods and prevention measures of botulism, critically analyze them and describe the research findings. Therefore, a bibliographic review was performed using online databases as PubMed, Scopus, Web of Science, and Google Scholar as well as the following keywords *C. botulinum*, botulism, botulinum neurotoxin for identifying the evidence published both in the country and abroad.

Results. When analyzing the existing evidence, there was noticed that botulism is a severe neurological disease caused by the complex family of botulinum neurotoxins that can be acquired through exposure to the pre-formed toxin via improperly-stored food, iatrogenic injection, and bioterrorism. Moreover, in infants and wound botulism cases it can be the result of a systemic release of the toxin in vivo. Most studies have shown that botulism is an intoxication usually caused by ingestion of potent neurotoxins, the botulinum toxins, formed in contaminated foods. Person to person transmission of botulism does not occur. The standard method for rapid diagnosis is positive laboratory findings (detection of toxin in the patient's serum, feces, gastric, intestinal contents, wound swabs and tissues), however the clinical manifestations and patient history are also very important. Laboratory rapid diagnosis of botulism is required for successful therapy, considering that it is a life-threatening condition. This disease can be fatal if left untreated, but most people who receive a prompt diagnosis and treatment can fully recover from the illness.

Conclusions. The results of many scientific papers have demonstrated that botulism is a rare but serious condition caused by toxins from bacteria called *Clostridium botulinum*. The authors described the principle of diagnosis and showed that it is usually based on anamnesis and clinical findings followed by laboratory investigations: the presence of BoNT in serum, stool or food, or a culture of *C. botulinum*. Also, each case of botulism is considered a public health emergency and requires immediate report of the suspected case to the ministry of health or national agency of public health.

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CLOSTRIDIOIDES DIFFICILE INFECTION: LABORATORY DIAGNOSIS AND CONTROL STRATEGIES

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Keywords: *C. difficile infections, epidemiology CDI, diagnoses CDI.*

Introduction. *Clostridioides* (previously *Clostridium*) *difficile* has received much attention in the past decades due to its rapid spread and rising virulence. The reclassification of *Clostridium difficile* to *Clostridioides difficile* in 2016 was based on phenotypic, chemotaxonomic and phylogenetic analyses. The bacterium is an anaerobic, spore-forming, Gram-positive bacillus that that causes infectious diarrhea by producing two toxins - toxin A (an enterotoxin) and toxin B (a cytotoxin). *C. difficile* is spread via the oral-fecal route and in hospitalized patients may be acquired through the ingestion of spores from other patients, healthcare personnel's hands, or from environmental surfaces. The incidence and the severity of *C. difficile* infection (CDI) have been significantly increased globally during the last 20 years. CDI is a leading cause of antibiotic-associated diarrhea and one of the most common healthcare-associated infections resulting with high levels of morbidity and mortality.

Material and methods. The objective of the study was to carry out an analysis of the literature related etiology, epidemiology diagnostic methods and prevention measures of CDI. The bibliographic search was made using internet search medical databases as Medline (PubMed) and Scopus, as well as through the other relevant.

Results. After several decades the epidemiology of CDI noted a marked increase in incidence and severity, occurring at a disproportionately higher frequency in older patients. *C. difficile* exists in two forms: the vegetative form highly sensitive to oxygen and the heat-stable spore form, which is able to survive a variety of harsh conditions. The clinical picture is diverse and ranges from asymptomatic carrier status, through various degrees of diarrhea, to the most severe, life threatening colitis resulting with death (liquid diarrhea, dehydration, fever, appetite loss, and abdominal pain, which are often severe). The diagnostic methods have considerably progressed over the years. Multistep algorithms combining two or three assays can increase diagnostic accuracy of *C. difficile* infection and are recommended, especially when there are no institutional criteria for patient stool submission. The best performing diagnostic algorithm may differ in each institution, depending on test volume, patient population, laboratory work flow, and cost.

According CDC, the core strategies for the prevention of CDI in acute care facilities include: isolate and initiate contact precautions for suspected or confirmed CDI; confirm CDI in patients; perform environmental cleaning to prevent CDI; develop infrastructure to support cdi prevention; engage the facility antibiotic stewardship program.

Conclusions. Since the last decade, *C. difficile* has remained a major cause of attention in hospitals and also an important topic for research worldwide. Diagnosis is based on direct detection of *C. difficile* toxins in feces, and studies recommend multistep algorithms combining two or three assays. Appropriate use of antibiotics and contact precautions, for example, using gloves, hand washing, and environmental disinfection, along with integrated surveillance programs can be effective for the control of CDI outbreaks.

REQUIREMENTS FOR AUTHORS

Rules of drafting

The manuscript (written in Romanian, English, French and Russian) should be in accordance with the guidelines published in: *Uniform Requirements for Manuscripts Submitted to Biomedical Journal (1994) Lancet 1996, 348, V2; 1-4* (www.icmje.org). The manuscripts should be written in font Cambria, size 11 points, spaced at 1.0, fully justified alignment, fields 2 cm on all sides. All pages must be numbered consecutively (in the right bottom corner) and continuously. Abbreviations should be explained at first occurrence in the text and should not be excessively used. The manuscripts must not exceed the number of words (without the title, affiliation, abstract and references): re-view articles – 4,500 words; research articles – 3,000 words; expert opinions – 2,500 words; case presentation – 1,700 words; experimental and clinical notes – 1,300 words; book reviews and presentations – 2,000 words; tea-ching articles – 4,000 words. The volume of tables and figures should not exceed ⅓ from the volume of the manuscript. The journal reserves the right to make any other formatting changes. Rejected manuscripts are not returned.

All manuscripts submitted for publication should be accompanied by two abstracts: in the language of origin of the article and English.

Title and authors

The title should be as short as possible (maximum – 120 signs with spaces), relevant for the manuscript content. The names of the authors should be written in full: name, surname (*e.g.:* Jon JONES). Affiliation should include: Department/Unit/Chair, University/Hospital, City, Country of each author. Beneath the affiliation, the author`s details and contact information – e-mail address (*e.g.:* corresponding author: Jon Jones, e-mail: jon.jones@gmail.com).

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The manuscript should comprise the following subheadings (capitalized):

- **SUMMARY**
- **INTRODUCTION** (will reflect the topicality and the general presentation of the problem studied, purpose and hypothesis of the study)
- **MATERIAL AND METHODS**
- **RESULTS**
- **DISCUSSIONS**
- **CONCLUSIONS**
- **CONFLICT OF INTERESTS**
- **ACKNOWLEDGEMENT** (optional)
- **ETHICAL APPROVAL** (specify the presence or absence of a positive opinion from the ethics committee: no, date, institution ad informed consent)
- **REFERENCES**

The **summary** should contain 1,600 signs with spaces:

- **Introduction**
- **Material and methods**
- **Results**
- **Conclusions**
- **Key words:** 3-5 words

The summary should not include tables, charts, and bibliographic notes; information not included in the article.

Figures. The text included in figures should be written in font Cambria, 10 point. Each figure should be accompanied by a heading and legend. They should be numbered with Arabic numerals and placed in parentheses (*e.g.:* fig. 1). Both the title (*e.g.* Figure 1) and legend are centred, below the figure.

Tables. The text included in tables should be written in font Cambria, 10 point. Each table should be accompanied by a heading. Tables should be inserted into the text and adjusted to the width of the page. The tables are numbered in Arabic numerals and mentioned in body text in parentheses (*e.g.* tab. 1). The title of the table is centred on the top of the table (*e.g.* Table 1).

References are numbered in the order they appear in the paper. The reference sources are cited at the end of the article by using AMA style and will include only the references cited within the text (the reference is numbered within round parentheses). The in-text citations that appear more than once are numbered si-milarly as in the first citation. The number of references should not exceed 50 sources. The scientific authors are responsible for the accuracy of their writings. The reference list should include only those references that have been consulted by the authors of the manuscript. The elements of the reference sources are written exactly in accordance with the requirements.

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