ABSTRACT BOOK

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SCIENTIFIC AND PRACTICAL CONFERENCE WITH INTERNATIONAL PARTICIPATION DEDICATED TO THE WORLD HEALTH DAY 2024 «MY HEALTH, MY RIGHT»

APRIL 5, 2024, BOGOMOLETS NATIONAL MEDICAL UNIVERSITY, KYIV, UKRAINE

Wiad Lek. 2024;77(4):863-872. doi: 10.36740/WLek202404137 DOI

Analysis of the dynamics of the medical consequences of the accident at the chernobyl nuclear power plant

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ABSTRACT

Introduction: This year, 38 years have passed since the accident at the Chornobyl nuclear power plant (ChNPP), the largest man-made disaster in the history of mankind. Monitoring of medical consequences, along with ecological and socio-economic consequences of the accident, continues. The situation that developed after the accident at the ChNPP is unique, as there is an opportunity to observe the impact of small doses of radiation on the health of a large contingent of the population living in a large area and for a long time. Immediately after the accident, a medical register of victims was formed, consisting of four groups: 1 - liquidators, II - evacuees, III - living in the territories of radio-ecological contamination, and IV - persons born to parents of groups 1-3. Subsequently, individuals of the IV group themselves became parents. Therefore, a new V group was formed - children born to parents of the IV group, in fact, the third generation of victims.

Aim: is to study the dynamics of the state of health of the Ukrainian population affected by an accident at the Chornobyl nuclear power plant during 2014-2022.

Materials and Methods: The research materials were official statistical data of the Center for Medical Statistics of the Ministry of Health of Ukraine. Medical statistical and analytical methods were used in the research.

Results: In 2022, the number of the affected contingent, which consists of 66.8% of the population living in the territories of radio-ecological pollution, was 2,011,779 and decreased by 31.4% during the studied period. The contingent of victims is present in each of the regions of Ukraine due to migration, but 75% live in the four regions of Ukraine that suffered the most - Kyiv, Zhytomyr, Rivne, and Volyn. Victims of the accident at the ChNPP are subject to annual medical examinations, according to the results of which the percentage of those recognized as sick is 88.57%; in particular, among the children of the V group, they are 71.17%, and then all 100% of liquidators are recognized as sick. The analysis of the prevalence and incidence indicators of the adult affected contingent revealed their positive dynamics in the period 2014-2022. These indicators decreased by 9.8% and 19.7%, and amounted to 2289.9‰ and 493.5‰, respectively. The rate of primary disability also decreased to 14.83 cases per 10,000 of the relevant population (by 37.9%). However, the death rate of victims among the adult population increased by 14.1% and amounted to 23.3‰. For example, by 2022, were 137,095 liquidators left; their number decreased by 23% in almost 10 years, and therefore every fourth liquidator died during this period. Analysis of the health indicators of children, whose specific weight among the contingent of victims is 18.7%, has an even more pronounced positive dynamic. Thus, the prevalence of diseases decreased by 18.0%, incidence - by 19.0%, primary disability - by 16.7%, and the mortality rate of affected children decreased by half. On the one hand, this trend can be explained by the natural decrease in the level of radiation exposure in the environment over time. On the other hand, there is obviously an incomplete record of cases of diseases that are registered upon appeal, and people are unwilling to register their disability, possibly for financial reasons. A more detailed comparative analysis is needed for the health status of certain groups of the affected population, certain classes of diseases, and certain regions, with a mandatory comparison of the obtained indicators with the general ones for adults and children.

Conclusions: The positive dynamics of the health of the population affected by accident at the ChNPP cannot but please, but the dissonance between the decrease in the levels of the vast majority of indicators and the increase in the share of patients among those examined, especially in relation to the adult population, is alarming.

KEY WORDS: population health, morbidity, disability, mortality, radiation exposure

Analysis of valuations of the accessibility and quality of mental health care in the conditions of the coronavirus disease pandemic and during state of war

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ABSTRACT

Introduction: Mental health care is an important component of the health care system. The quality and accessibility of appropriate care are important indicators of the system's activity under the influence of extreme risks. Therefore, within the framework of sociological surveys within the framework of the PsyCare-Kyiv Region project of the Ukrainian Association of Doctors-Psychologists regarding the state of the mental health system of Kyiv city and the Kyiv region, respondents' valuations of the accessibility and quality of mental health care for patients in the conditions of the COVID-19 pandemic and during state of war were studied.

Aim: To carry out a comparative analysis of the impact of extreme risks in the conditions of the COVID-19 pandemic and during state of war on the accessibility and quality of mental health care on the example of the Kyiv city and the Kyiv region.

Materials and Methods: Epidemiological, sociological, medical-statistical methods, including correlation analysis by calculating Spearman's rank correlation coefficient (Rho), Kendall's rank correlation coefficient (Tau), rank Gamma correlation coefficient. Statistical processing of research materials was carried out using methods of biostatistical analysis implemented in Microsoft Excel 2016 and Biostat, AnalystSoft Inc. Version 7.3, software packages.

Results: In the Kyiv region, 315 respondents were interviewed, of which 69.8% were educators, 16.5% were representatives of the social sphere, 13% were specialists in health care institutions, and 0.6% were representatives of the non-governmental sector.

Evaluating on a scale from 1 to 7 points whether the quality of mental health care for patients has undergone changes in the conditions of the COVID-19 pandemic, the respondents gave an estimate of 4.0 ± 1.2 points, accessibility in the same conditions - at 4, 2±1.2 points. Similar valuations in the conditions of state of war were 4.6 ± 1.4 points for the quality of assistance, accessibility - 4.9 ± 1.4 points.

In the Kyiv city, 206 respondents were interviewed, of which 52.4% were educators, 29.6% were health care professionals, 17.5% were representatives of the social sphere, and 0.5% were representatives of the non-governmental sector.

Evaluating on a scale from 1 to 7 points, whether the quality of mental health care for patients has undergone changes in the conditions of the COVID-19 pandemic, the respondents gave an estimate of 4.2±1.3 points, accessibility in the same conditions – at 4.2±1.3 points. Analogous evaluation in conditions of state of war was drafted of quality granting assistance 4.8±1.5 points, accessibility - 4.8±1.4 points.

Correlation analysis proved the presence of a strong direct correlation between the valuations of changes in the quality of mental health care provided to patients in the conditions of the COVID-19 pandemic and during state of war (Kyiv region: Rho =0.611, Tau =0.558, Gamma=0.669, p< 0.05; Kyiv city: Rho =0.584, Tau =0.522, Gamma=0.644, p<0.05) and between the valuations of changes in the accessibility of mental health care to patients in the conditions of the COVID-19 pandemic and during state of war (Kyiv region: Rho =0.596, Tau =0.564, Gamma=0.670, p<0.05; Kyiv city: Rho =0.602, Tau = 0.539, Gamma=0.657, p<0.05).

Conclusions: The problems of the organization of mental health care, manifested during the fight against the COVID-19 pandemic, have deepened in the conditions of martial law and the emergence of challenges related to full-scale war, and require a systemic organizational solution.

KEY WORDS: Mental health, health services and mental health administration, health care quality assessment, accessibility of health services, COVID-19

Artificial intelligence potential in the acceleration of healthcare system digital transformation according to the patient-centric model

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ABSTRACT

Introduction: Artificial intelligence (AI) is revolutionizing healthcare, and its impact on digital health and eHealth programs is becoming increasingly significant due to the acceleration of digital transformation according to the patient-centric model. In many countries, Digital Health and eHealth are the primary tools for managing healthcare costs and accumulating patient health information. AI can potentially transform digital health services by making them more efficient, accessible, and personalized.

Aim: To analyze the current trends of AI in optimizing the processes of working with Digital Health and eHealth data to achieve better healthcare outcomes and facilitate digital transformation according to the patient-centric model.

Material and Methods: Scientific publications on using AI in Digital Health and eHealth were analyzed in PubMed, ScienceDirect, Springer, and Google Scholar. From 2019 to February 2024, a bibliographic analysis of indexed publications in PubMed was performed using the VOS viewer service. WHO normative documents on AI in health care were analyzed.

Results: Based on the bibliographic analysis, visualization maps were built, reflecting the interdependence of keywords in 471 publications indexed in PubMed by the query "artificial intelligence AND electronic health". 10 main clusters between the most used keywords from the selected research topic were identified. The main clusters that reflect the integration of AI, Digital Health and eHealth systems include: AI; machine learning; deep learning; electronic health records, ehealth; digital health; telemedicine; mHealth; telehealth; big data; precision medicine.

AI technologies include machine and deep learning, computer vision, and natural language processing. These technologies allow automated processing of various data, interpreting voice commands, analyzing processes, and generating effective solutions when working with data. Integrating AI in Digital Health and eHealth provides automated support and control of the physician's work when entering electronic health records and making decisions about the patient's treatment plan based on the best evidence. This increases the accuracy of diagnostic and treatment appointments, reduces medical errors, and improves the doctor's workflow. A fairly common practice in this direction is using chatbots with AI support as personalized assistants for doctors when working in the Digital Health or eHealth environment. Such chatbots are successfully used to perform various routine tasks of a doctor and are also helpful in monitoring health and mentoring patients.

Developing a patient-centered Digital Health and eHealth model creates prospects for expanded and continuous monitoring of patient health indicators. This can be ensured through mHealth, telemedicine, telehealth, the Internet of medical things, digital twins, etc., and convergent technologies in the healthcare system. Such technological innovations allow, if necessary, to constantly collect and process data on the health of patients using medical wearable devices as personal sensors for monitoring physiological indicators. The successful integration of many biomedical data sources into the AI model is essential in this regard. In addition to data generated from wearable patient devices, multimodal AI solutions can also include individual profile metrics based on genome sequencing, different levels of omics, continuous monitoring of blood biomarkers, metabolites, and more. Applying AI to analyze this multimodal biomedical data is a valuable resource for better diagnostic performance, comprehensive and improved patient care. This creates favorable conditions for applying personalized decision support systems and promotes the implementation of personalized medicine.

Another trend is using one type of generative AI, large multi-modal models (LMMs). Recently, the WHO published guidance on LMMs in health care (2024). LMMs have potential applications in diagnosis and clinical care, patient-centered applications, clerical and administrative tasks, medical and nursing education, scientific research, and drug development.

Conclusions: The considered AI trends contribute to optimizing the processes of working with Digital Health and eHealth data. The use of AI opens up new opportunities for the introduction of precision health and personalized medicine. It contributes to developing a patient-centric health care model and implementing valuable services for patients, such as hospital at home and virtual health coaches, etc., for continuous health care.

KEY WORDS: artificial intelligence, eHealth, electronic health records

The relevance of creating a methodical base of the environmental monitoring national system based on international approaches as a basis for preserving public health

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ABSTRACT

Introduction: Environmental monitoring of pesticides is a crucial component of efficient agricultural practices and environmental protection. Pesticide formulations are designed to control a specific pest, but unintended consequences for beneficial insects, birds, aquatic organisms (non-target species) can be significant. Ecological and biological monitoring aims to understand these ecological interactions and mitigate potential threats to biodiversity. Different countries and regions, including the European Union (EU), use different monitoring strategies. Monitoring of pesticides non-target effects is a critically important aspect of environmental management and public health in Ukraine and the world.

Aim: Assessment of the relevance of creating a methodical base of the environmental monitoring national system based on international approaches as a basis for preserving public health.

Materials and Methods: The following information sources were for analysis: domestic and European regulatory documents and methodological recommendations. We used the methods of empirical and theoretical research of scientific information, namely analysis, synthesis, induction, deduction and systematization.

Results: Currently, Ukraine is at the initial stage of integration of the state system of environmental assessment and monitoring of non-target effects of pesticides with European approaches. State toxicological and hygienic examination of pesticides is carried out by accredited research institutions. The State Food Safety and Consumer Protection Service of Ukraine plays a key role in overseeing pesticide monitoring activities. There is a large scientific and regulatory base for conducting toxicological and hygienic examination and control of pesticides, a system of organizations for study, pre-registration tests and post-registration monitoring is functioning.

For ecological and hygienic monitoring, everything is limited to a pre-registration assessment. Ukrainian research institutions, such as the Plant Protection Institute of the National Academy of Agrarian Sciences and other accredited scientific institutions, conduct research on the environmental impact of pesticides on non-target organisms, providing valuable data for regulatory decisions. However, post-registration assessment, control and monitoring are actually not provided for. Only in cases of emergency, such as bee poisoning, etc., research is conducted. But they are, of course, one-time and do not give an idea about the circulation of a certain pesticide in the environment or the long-term, cumulative effect on non-target species.

In the EU, USA and other countries, there are approaches to post-registration studies: studying the dynamics of the pesticides active ingredients concentrations in water, soil, air, plants; study of residues in insects, soil organisms; observation of the behavior and state of health of birds, fish, aquatic invertebrates, non-target insects, etc., which live in areas of active agricultural production using chemical plant protection technologies.

These approaches, with appropriate modification to domestic conditions, must be integrated into the Ukrainian system of ecological and hygienic assessment and monitoring.

Conclusions: It is important to implement in Ukraine world-class approaches to post-registration ecological and hygienic monitoring and control, to prevent the accumulation of pesticides, the remote consequences of their impact on the ecosystem, and subsequently on human health, the possibility of timely response to changes in the state of animal, bird, and insect populations, the state of the water, soil and air environment.

KEY WORDS: Ecological monitoring, pesticides, population health

Epidemiological characteristics of scarlet fever in Ukraine

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ABSTRACT

Introduction: Scarlet fever is an infectious disease caused by the bacterium Streptococcus pyogenes, also known as group A streptococcus. Recovered scarlet fever can lead to dangerous complications such as sinusitis, otitis, myocarditis, nephritis, and others. Scarlet fever is primarily transmitted through airborne droplets. According to literature data, the basic reproductive number for scarlet fever is 5-8 (Yiman Geng, Leiliang Zhang, 2022). This means that each person with scarlet fever can potentially infect 5 to 8 other individuals in the susceptible population. Infectious diseases with such values of the basic reproductive number spread quite easily and can lead to outbreaks or epidemics if not controlled. Knowledge of the epidemiological situation regarding scarlet fever in Ukraine is crucial for the prevention and control of this disease.

Aim: To clarify the epidemiological characteristics of scarlet fever in Ukraine for the years 2018-2023.

Materials and Methods: A retrospective epidemiological analysis was used to describe and assess the spread of scarlet fever for the years 2018-2023 in Ukraine using Form No. 2 (annual reporting) "Report on certain infectious and parasitic diseases."

Results: The average incidence rate of scarlet fever during 2018-2023 was 14.0 per 100,000 population. During the period from 2020 to 2022, the average incidence rate of scarlet fever was 6.6 per 100,000 population. It is necessary to note that restrictive preventive measures were introduced due to the COVID-19 pandemic from March 2020 to 2022. After the lifting of quarantine measures regarding COVID-19 worldwide, including Ukraine, there was a resurgence in the level of infectious diseases. Regarding scarlet fever: during periods when quarantine restrictions were not yet implemented and when they were already lifted, the average incidence rate of scarlet fever was 28.14 per 100,000 population. In 2023, the incidence of scarlet fever is 25.5 per 100,000 population, which corresponds to the overall trend of scarlet fever incidence and does not exceed the average multi-year indicator. In the age structure of the incidence of scarlet fever, children account for 98% of cases. The highest incidence is observed in children aged 5-9 years and 1-4 years, reaching 172.6 and 138.9 per 100,000 population, respectively, which is more than 10 times higher than the incidence in other age groups. Thus, children aged 1 to 9 years are at risk group for scarlet fever. The highest number of scarlet fever cases in 2023 in Ukraine was registered in the cities of Kyiv, Ivano-Frankivsk, Zhytomyr, Rivne, and Lviv regions. Over the period from 2018 to 2022, the "leading" regions in terms of scarlet fever incidence were Rivne, Volyn, and Zaporizhzhia regions. The incidence of scarlet fever in cities is 2.25 times higher than in rural areas, which almost reflects the predominance of scarlet fever incidence among the child population in cities compared to the incidence among children in rural areas - 2.6 times higher. In 2023, scarlet fever incidence is observed throughout the year, but an increase in cases is recorded in the autumn-winter period.

Conclusions: Scarlet fever is not subject to controlled immunoprophylaxis measures for infectious diseases; it remains a childhood infection. This infectious disease can be prevented by adhering to preventive measures and timely implementation of anti-epidemic measures. The age distribution shows that the highest incidence is registered among children aged up to 9 years attending preschool and general educational institutions. Scarlet fever can spread in childcare or educational institutions through close contact among children. It is necessary to encourage children and adults to cover their mouth and nose with a tissue when coughing or sneezing, as well as to wash hands after coughing, sneezing, or using tissues, that is, to observe cough etiquette, personal hygiene practices, and regularly ventilate premises. The predominance of morbidity in urban areas compared to rural areas is likely associated with a higher frequency of seeking medical care specifically in cities. It remains necessary to monitor the incidence of scarlet fever by regions of Ukraine.

KEY WORDS: scarlet fever, incidence, age distribution, urban-rural differences

Trends in acute myocardial infarction incidence under the influence of emergency situations

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ABSTRACT

Introduction: Despite advances in the diagnosis and treatment of acute myocardial infarction (MI), it continues to be a pathology associated with mortality and disability among patients with cardiovascular diseases. In recent years, under the influence of emergency situations, the incidence of MI may have increased.

Aim: To assess the trends in the incidence of MI during the years 2019-2023 at both national and regional levels in Ukraine.

Materials and Methods: The study utilized data from the Public Health Center of the Ministry of Health of Ukraine regarding the level of hospitalized patients due to AMI and mortality rates in Ukraine and Ternopil region for the period 2019-2023. The research employed a systemic analysis method and statistical research methods.

Results: During the period 2019-2023, the population of Ukraine was significantly affected by adverse factors of emergency situations. These factors play a significant role in the risk of developing MI, particularly the impact of coronavirus infection on blood coagulation system disorders, psychosocial stress, and worsening ecological conditions.

Taking into account these peculiarities, we conducted an analysis of hospitalization rates for MI during the period 2019-2023 at both national and regional levels. Hospitalization rates in Ukraine decreased from 137.6 in 2019 to 122.4 in 2022 per 100,000 population. The mortality rate ranged from 13.8% to 15.9%, with the highest level observed in 2021. There is an increasing proportion of patients with ST segment elevation myocardial infarction (STEMI) among all patients from 67.3% to 70.6% over the study period. Hospitalization rates for STEMI in Ukraine decreased from 92.6 in 2019 to 86.4 in 2022 per 100,000 population. Mortality from this form of MI ranged from 15.4% to 17.9%, with the highest level also in 2021.

In Ternopil region, hospitalization rates for MI increased from 92.8 in 2019 to 116.5 in 2022 per 100,000 population. The mortality rate ranged from 12.5% to 14.5%. The proportion of patients with STEMI among all patients ranged from 56.4% to 70.2%. Mortality for this form of MI ranged from 11.4% to 15.9%, with the highest level also in 2021.

Conclusions: The analysis conducted revealed a decrease in hospitalization rates for MI during the period 2019-2022 at the national level in Ukraine. However, in 2021, there was an increase in mortality from MI overall and in particular STEMI, indicating an increased susceptibility to thromboembolic complications in the cardiovascular system against the backdrop of a high incidence of coronavirus infection. This suggests a possible influence of COVID-19 on the occurrence and more severe course of MI.

KEY WORDS: myocardial infarction, COVID-19 pandemic, incidence

Peculiarities of formulations approved in ukraine to use against «gray rot» in comparison with european formulations

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ABSTRACT

Introduction: Since 2009, new regulations have been introduced in Europe that tighten the requirements for chemical compounds used as pesticides. Considering Ukraine's active course towards joining the European Union, signing agreements on the harmonization of standards and obtaining the status of a candidate for EU membership, all the above-described approaches will gradually be integrated into domestic legislation and agricultural practice. As a result, the range of chemical plant protection products will be significantly reduced. Which, in turn, carries the risk of reduced harvests and a worsening of the world's hunger situation, given the volume of imports from Ukraine and its crop losses during a full-scale invasion. An alternative to chemical plant protection products today are biopesticides, the use of which for plant protection can lead to many positive results, such as reducing pesticide residues in food, thereby reducing the risk to the consumer.

Aim: Assessment of peculiarities of formulations approved in Ukraine to use against "gray rot" and their comparison with European formulations.

Materials and Methods: The following data were used to analyze and compare formulations: List of pesticides and agrochemicals approved for use in Ukraine 2022; EU Pesticides Database; information from the websites of manufacturers and official regulation documents.

Results: Already today, throughout the world, the use of chemicals is the main method of combating plant diseases both before and after harvest. Fungicides used exclusively to control *B. cinerea* account for 10% of the global fungicide market. Several families of synthetic botrycides are used to control plant diseases caused by it. However, resistant strains of *B. cinerea* may exist, as this fungus can generate and accumulate mutations in its genome. In addition, consumers prefer organic products, the production of which does not use pesticides. The use of biopesticide formulations, in particular based on *Bacillus amyloliquefaciens*, is gaining more and more popularity in Europe and the world.

Today, in Ukraine, there are fungicides to combat gray rot. But, to date, there are certain problems with every fungicide against "gray rot" in Ukraine: a long period before harvesting, which significantly exceeds the duration of the therapeutic and protective effect, primarily berries; impossibility of processing before storage; absence of the possibility of processing ripe berries, since they are used raw, without any processing that could reduce pesticide residues; the ban of active substances in the EU, which will potentially lead to their ban in Ukraine in the near future; maximum residue limits (MRLs) values significantly exceed the EU MRLs, which contradicts the requirements of the harmonization of the regulatory framework.

The solution to these problems can be the use of biopesticides. Today in Ukraine there are several drugs recommended for combating gray rot based on *Bacillus amyloliquefaciens*. However, only two of these preparations contain exclusively *Bacillus amyloliquefaciens*, are used on special crops (berries) and are declared by their manufacturers as biofungicides.

Conclusions: It has been established that the only full-fledged alternative to chemical means of plant protection today are biopesticides, the use of which in plant protection systems will reduce pesticide residues in food products, and therefore the risk for the consumer. It is shown that considering the current processes of European integration of Ukraine, which include the harmonization of medical and sanitary standards and the review of the entire base of plant protection products, the development, study and introduction of new biological preparations is an extremely urgent and promising task.

KEY WORDS: Biofungicide, regulations harmonization, "gray rot"

The role of biostatistics in the professional training of future masters of medicine and pharmacy

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ABSTRACT

Introduction: Education has always been at the base of human development and our progress as a society, since it's role is not only limited to ensuring the individual development, but also creating the intellectual and spiritual potential of the country in general. Today, the need to preserve the public health encourages institutions of higher medical education to train personnel, ready to solve various complex tasks of modern medicine. Saying that, the teaching of the course "Biostatistics" is becoming vital and should be a necessary component of curricula, implemented in medical schools.

Aim: Studying of the importance of teaching "Biostatistics" for the formation of professional competencies of future health care professionals in Ukraine.

Materials and Methods: The authors used information-analytical, bibliosemantic and comparative methods during the research.

Results: The first year curriculum of masters's degree in medicine at the Bogomolets National Medical University includes the elective course "Biostatistics", the assessment of which will help the future doctor to master the general basics of statistical science, methodology and practical skills of statistical analysis, actual methods for calculating performance indicators of healthcare institutions, methods for processing social and medical information arrays. There is a wide range of statistical methods, which are used in clinical and preventive medicine by standardising various factors of the working environment, carrying out experimental, clinical and laboratory studies, calculating drug doses, assessing the treatment and prevention effectiveness, etc.

We also studied the perspectives of studying biostatistics by future pharmacists. In some universities, for the specialty 226 "Pharmacy, industrial pharmacy" the future masters of pharmacy may choose elective courses, the purpose of which is to form theoretical knowledge, master practical skills in the use of modern pharmaceutical information systems and the latest applied statistical programs in the field of pharmacy. For example, at the National University of Pharmacy during the first or the second year of study, students have the opportunity to study the course "Statistical Methods in Pharmacy." The elective course "Pharmaceutical Informatics and Statistics" is taught at the Odesa National Medical University. Mastering statistical knowledge will provide students-pharmacists with the necessary professional competencies that might help them use international clinical guidelines and recommendations for evidence-based medicine, independently collect, develop, systematize data from pharmaceutical studies, carry out their statistical analysis, formulate conclusions about the results of the study. At the Bogomolets National Medical University first-year pharmacy students are studying normative course "Higher Mathematics and Statistics," as well as "Information Technologies in Pharmacy," which cover some problems of statistical analysis and data processing.

Conclusions: Having analysed the importance of studying biostatistics for the future healthcare professionals, we sorely advise to introduce the variable discipline "Biostatistics," into the curriculum of master's degree in pharmacy at Bogomolets National Medical University, as it would contribute to the formation of holistic ideas about the realm and introduce the basic concepts for further studying of specialized theoretical and professional disciplines by the students.

KEY WORDS: biostatistics training, preparation of masters in medicine and pharmacy, educational plan, curriculum, competencies formation

The process of differentiation of teaching hygiene disciplines in the first half of the XX century

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ABSTRACT

Introduction: preventive care is an important part of the activities of the national health care system. Its importance has grown over the past two centuries. And this was clearly visible in connection with the pandemic of a new coronavirus disease. In this regard, studying the experience of teaching Hygienic disciplines in higher medical schools is of great interest.

Aim: explore how the differentiation of teaching Hygienic disciplines occurred in the first half of the 20th century using the example of the Odessa Scientific and Medical Center.

Materials and Methods: Materials are published historical sources; method is historical.

Results: The Faculty of Medicine at Odessa University appeared in 1900, and in 1920 the Faculty of Medicine was separated from the university into a separate higher academic institution. In accordance with the general university charter of 1884, there were to be 23 Departments (Professors) at the medical faculty of universities. One of them was "Hygiene and its use: Epidemiology and Medical Police, Medical Statistics, the doctrine of Epizootic Diseases and Veterinary Police." It is necessary to clarify the term "Medical Police" (MP), which has fallen into disuse. MP is an empirical science and subject of teaching about the forms of government activity in the field of health care. For the sake of brevity, we will further refer to this department as the Department of Hygiene. In 1903, the Department of Hygiene at the Faculty of Medicine was organized by Professor G.V. Khlopin (1863-1929); in 1905-1914 this Department was headed by Professor I.I. Kiyanitsin (1855-?), and in 1914-1941, 1944-1952 Professor N.N. Kostyamin (1869-1958). In 1920, Soviet power was established in Odessa. The transformation of the Odessa Scientific and Medical Center began. In 1923, an academic discipline was separated from the Department of Hygiene into a separate Department, which in the charter of 1884 was called "Medical Police", and now, in accordance with German tradition, it began to be called "Social Hygiene". In 1923-1928 the head of this Department was Professor L.V. Gromashevsky (1887-1980), and in 1928-1941, 1944-1963 by Professor I.L. Dailis (1889-1981). (Since 1941, this Department was called the Department of Health Organization). In 1924, the Department of Professional Hygiene (Occupational Hygiene) was separated from the Department of Hygiene, which was jointly headed by Professor N.N. Kostyamin. In 1926-1930 it was headed by Professor M.L. Lewontin (1876-1945); then M.B. Zlatopolsky (1886-?), and in 1937-1941, 1945-1960 by Professor Ya.B. Reznik (1902-1979). The next stage of differentiation in the teaching of Hygienic disciplines began in 1932 in connection with the creation of the Sanitary-hygienic Faculty at the Odessa Medical Institute. In 1932-1941, 1944-1957 the head of the Department of Municipal Hygiene was Professor S.S. Aglitsky (1885-1957). In 1945-1953 the head of the Department of School Hygiene (Hygiene of Children and Adolescents) was Professor L.E. Berestechko (1888-1957). In 1933-1941 and 1944-1962 Professor A.I. Burshtein (1890-1965) was the head of the Department of Food Hygiene.

Conclusions: A periodization of differentiation in the teaching of Hygienic disciplines in the first half of the 20th century is proposed. Three periods have been identified. 1) at the beginning of the century there was one Department of Hygiene; 2) in the first half of the 1920s (since 1923), two Departments were separated from the Department of Hygiene: Social Hygiene and Occupational Hygiene; 3) since 1932, three academic disciplines were separated from the Department of Hygiene, which made up three Departments: Municipal Hygiene, School Hygiene (Hygiene of Children and Adolescents) and Food Hygiene.

KEY WORDS: Hygiene, Social Hygiene (Public Health), Ukraine, 20th century

The influence of structural elements of the daily routine on school-age children's mental health in Ukraine

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ABSTRACT

Introduction: The mental health of school-aged children has been greatly affected by both the COVID-19 pandemic and the ongoing war in Ukraine. Therefore, it is crucial to develop programs that aim to reduce the negative impact of war on children and adolescents, while improving their well-being. To promote the mental well-being of school-age children, it is important to maintain a balance between different activities during the day and getting enough sleep. Therefore, the study of this issue is an urgent problem that needs to be solved.

Aim: This study aimed to assess the impact of 24-hour behavior patterns on the mental health of Ukrainian children and adolescents during wartime.

Materials and Methods: A cross-sectional online survey was conducted in 2022 among parents of Ukrainian children aged 7-18 (n=1243, 51% boys) using the Q-RAPH and RCADS-P-25 questionnaires. The data was analyzed using Compositional Data Analysis (CoDA). The models were adjusted for gender, age, body mass index, and war factors (moving from a permanent place of residence, occupation, unsatisfied basic needs, separation from relatives, shelling and bombing, loss of housing and work, death of relatives or parents).

Results: CoDA analysis revealed significant links between better mental health and higher levels of moderate-to-vigorous physical activity (β=-0.09, $p<0.01$) as well as longer sleep duration (β=-0.15, $p<0.01$). Sedentary behavior was associated with higher depression and anxiety t-scores (β=0.19, $p<0.001$). The war has worsened the negative impact on mental health, with a significant interaction effect ($\beta = 0.23$, $p < 0.001$).

Conclusions: We have found that promoting a balanced daily routine is crucial to maintaining the mental health of children and adolescents, particularly during times of war. Public health policies and school-based programs should include strategies that help improve activity behaviors and mental well-being in this vulnerable population.

KEY WORDS: school-age children, physical activity, sedentary behaviour, sleep, war