

# Materialele conferinței

## 1. NCD and risk factors (bolile non-transmisibile și factorii de risc)

CZU:

DOI:

### PROFESSIONAL BURNOUT AMONG SURGEONS – A CROSS-SECTIONAL STUDY BASED ON THE MASLACH QUESTIONNAIRE

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**Introduction.** Professional burnout is a psychological syndrome resulting from prolonged exposure to chronic occupational stress and is characterized by three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. Surgical specialties are considered high-risk fields due to heavy workloads, increased clinical responsibility, and continuous decision-making pressure.

**Aim of the study.** To assess the prevalence and severity of burnout among surgeons and to identify professional categories at increased risk.

**Material and methods.** This descriptive cross-sectional study was conducted on a sample of 156 surgeons from republican, municipal, private, and consultative medical institutions. Data were collected anonymously using a questionnaire that included socio-demographic variables (sex, age, marital status, work environment), professional variables (type of institution, department, years of experience), and 25 items from the Maslach questionnaire, assessed on a 1–5 Likert scale. Statistical analysis was descriptive, evaluating the distribution of scores across the three dimensions of burnout.

**Results.** The sample was predominantly male (72%), with a mean age of 46 years. A total of 87% of respondents worked in urban areas, and 65% were employed in republican public hospitals. Emotional exhaustion was low in 25% of participants, moderate in 50%, and high in 25%. Higher levels were more frequent among surgeons with less than 5 years of professional experience and in departments with high patient turnover and severe pathology (septic, vascular, and colorectal surgery). Depersonalization was low in 58% of respondents, moderate in 30%, and high in 12%. Personal accomplishment was high in 45% of surgeons, moderate in 40%, and low in 15%, with higher values observed among surgeons with more than 25 years of professional experience. The overall prevalence of severe burnout was 20%, while moderate burnout was identified in 52% of participants.

**Conclusions.** Professional burnout among surgeons is predominantly moderate, with a relevant proportion of severe cases. Emotional exhaustion represents the most affected dimension, particularly among younger surgeons and those working in high-pressure departments. The implementation of institutional prevention strategies, mentorship programs, and structured psychological support is essential to reduce occupational risk.

**Keywords:** professional burnout, surgeons, emotional exhaustion, depersonalization, personal accomplishment, occupational stress.

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## EVALUATION OF SUNSCREEN USE AMONG YOUNG ADULTS AS A PRIMARY PREVENTIVE MEASURE AGAINST UV-INDUCED SKIN DAMAGE

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**Introduction.** Ultraviolet (UV) radiation is one of the main environmental risk factors for skin photoaging, pigmentation changes, and the development of skin cancers. Sunscreens are widely recommended as a primary preventive measure against UV-related skin damage. However, correct and consistent use is not always observed, especially among young adults.

**Aim of the study.** To evaluate sunscreen use as a preventive measure against skin damage and to assess awareness and real-life application practices among young adults.

**Material and methods.** A cross-sectional study was conducted between November and December 2025 among 101 students aged 18-24 years from different universities in Armenia, using convenience sampling. Participants were recruited on a voluntary basis and completed an anonymous structured questionnaire. The survey assessed the frequency and seasonality of sunscreen use, knowledge about SPF and the UV index, and adherence to recommended application guidelines.

**Results.** Among the participants, 72.3% were female. Overall, 64.4% reported using sunscreen products. Sunscreen use was mainly seasonal: 94 participants used it during summer, of whom 23 also used it in winter, 38 in spring, and 34 in autumn. For daily use, 50 participants preferred SPF 30 or SPF 50 products. Only 61% correctly reapplied sunscreen every two hours, and 48.5% knew that sunscreen should be applied at least 20 minutes before sun exposure. Regarding UV index awareness, 69.3% did not monitor it, 12.9% were unfamiliar with the concept, and only 17.8% reported following it. Although 95% recognized that sunscreen reduces the risk of skin cancer, proper and consistent application practices were limited.

**Conclusions.** The findings show that general awareness about the protective role of sunscreens is relatively high among young adults; however, this awareness does not fully translate into correct and regular use. Seasonal application patterns, limited attention to the UV index, and incomplete adherence to guidelines indicate the need for stronger educational efforts. Promoting correct and year-round sunscreen use is important for effective primary prevention of UV-related skin damage and skin cancer.

**Keywords:** sunscreen, ultraviolet radiation, skin cancer prevention, photoprotection, public awareness.

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## THE ASSOCIATION OF EXPOSURE TO SOME HEAVY METALS AND NEURODEGENERATIVE DISEASES IN ARMENIA

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**Introduction.** According to research, more than 50 million people worldwide suffer from neurodegenerative diseases (NDDs). In Armenia, NDDs are becoming increasingly significant due to population aging (individuals aged 65+ in 2025 is 14.4%), regional environmental risks - particularly heavy metal (HM) pollution, underdiagnosis (especially of Alzheimer's disease), and the absence of a national registry, which complicates healthcare planning and research. According to the literature, Fe, Zn, Cu, Cd, Pb, Hg, Al, As, and Mn are considered possible risk factors for the development of NDDs. In Armenia, non-ferrous metal mining is a leading economic sector and also a major polluter. Therefore, our research aims to identify these metals in environmental samples and biological material (hair).

**Aim of the study.** To investigate the content of certain HMs in environmental samples: arable land, street/house dust, and the incidence of NDDs in Armenia. For association determination, the presence and content of HMs will also be assessed in the hair of individuals with NDDs, namely Alzheimer's disease (AD) and Parkinson's disease (PD), as well as in hair samples from a control group. To achieve this objective, the following tasks will be completed:

1. Determine the presence and levels of HMs in selected samples.
2. Study the incidence rate and structure of NDDs in the study regions.
3. Conduct a comparative analysis of the content of certain HMs in environmental samples.
4. Comparative analysis of the prevalence of NDDs in the studied regions.
5. Study of the possible relationship between actual concentrations of HMs in environmental objects and the prevalence of NDDs.

**Material and methods.** research type: mixed case-control and ecological (correlational), methods: hygienic, chemical analytical, epidemiological, statistical. The concentration of heavy metals in all samples will be determined using an Agilent 4210-MP-AES atomic emission spectrometer. All data will be stored in specially created databases and encoded.

**Results.** Regional differences in heavy metal contamination are expected, with higher levels potentially associated with increased prevalence of AD and PD and elevated metal concentrations in patients' hair samples.

**Conclusions.** The findings may support a possible link between environmental heavy metal exposure and neurodegenerative diseases in Armenia, providing a basis for preventive public health strategies and further research.

**Keywords:** heavy metals, neurodegenerative diseases, environmental exposure, Alzheimer's disease, Parkinson's disease.

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## **SELF-ESTEEM, SLEEP QUALITY AND SOCIAL MEDIA USE AS RISK FACTORS OF FEAR OF MISSING OUT (FOMO) DEVELOPMENT AMONG ARMENIAN YOUNG ADULTS**

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**Introduction.** Fear of Missing Out (FoMO) is a persistent and inexplicable anxiety driven by a feeling that others might be enjoying experiences in which one is not involved, along with a strong desire to stay constantly aware of their activities. FoMO is a ubiquitous phenomenon that represents a significant public health concern, it acts as a pervasive mediator of reduced self-esteem and poor sleep quality exacerbating the global burden of mental health disorders. Despite the prevalence of this issue there is no research showing an association between FoMO development and these factors among Armenian young adults. To understand its development, most studies identify problematic social media use as the primary contributor to FoMO, while our research emphasises self-esteem as the central factor, combined with problematic social media use and poor sleep quality. This study tested the hypothesis that in Armenian young adults, low self-esteem combined with problematic social media use and poor sleep quality, compared to high self-esteem combined with low social media use and good sleep quality, is associated with higher levels of FoMO.

**Aim of the study.** The objective of this cross-sectional study was to discover an association between low self-esteem, poor sleep quality and problematic social media use, and a high level of FoMO.

**Material and methods.** A cross-sectional quantitative study was conducted among Armenian young adults aged 18-25 years. The study was conducted in February 2026. A total of 260 students participated from Yerevan and the provinces. Data were collected via a self-administered anonymous questionnaire incorporating the Fear of Missing Out Scale, the Pittsburgh Sleep Quality Index (PSQI-brief test), the Rosenberg Self-Esteem Scale and the Bergen Social Media Addiction Scale.

**Results.** Descriptive statistics (M for self-esteem-2.520, social media use-1.304, sleep quality-1.565, FoMO-1.358, SD for self-esteem-0.723, social media use-0.551, sleep quality-0.497, FoMO-0.480, for low self-esteem n=14-18%, problematic social media use=20.5%, poor sleep quality=43.2%, high FoMO=35.9%) were calculated for all variables. A total of 260 participants were included in the analysis (M age 20.42: 15,4% male, 84.6% female). Higher FoMO levels were significantly associated with increased low self-esteem ( $p < 0.0018$ ), problematic social media use ( $p < 0.0001$ ), and poor sleep quality ( $p < 0.0001$ ).

**Conclusions.** These findings highlight that there is a strong association between a high level of FoMO and low self-esteem, combined with poor sleep quality and problematic social media use. Still, there is room for study to find out whether the above-mentioned factors appear as cause or outcome, which will require longer observation of developmental progression.

**Keywords:** FoMO, Armenian young adults, self-esteem, social media use, sleep quality.

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## **NATIONAL TRENDS AND REGIONAL DISPARITIES IN AGE-STANDARDIZED PREMATURE MORTALITY FROM NONCOMMUNICABLE DISEASES IN THE REPUBLIC OF MOLDOVA, 2014-2023**

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**Introduction.** Noncommunicable diseases (NCDs) are the leading cause of premature mortality worldwide and in the WHO European Region.

**Aim of the study.** To assess trends in age-standardized premature mortality from NCDs in the Republic of Moldova between 2014 and 2023.

**Material and methods.** A retrospective ecological study was conducted using depersonalized data from official medical death certificates (Form 106/e). Deaths among persons aged 30-69 years were analysed. Causes of death were classified according to ICD-10 into four WHO-defined NCD groups: cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes. Age-standardized premature mortality rates (ASPMR per 100,000) were calculated using the direct standardization method with the 2014 Republic of Moldova census population as the standard. Ninety-five percent confidence intervals were estimated using the Fay and Feuer method, ( $p < 0.05$  was considered statistically significant). Analyses were stratified by sex, urban/rural residence, and four administrative regions (Chisinau, North, Centre, South). Temporal trends were evaluated by linear regression and average annual percent change (AAPC).

**Results.** A total of 100,524 premature deaths were recorded. Cardiovascular diseases accounted for 60.1% of deaths, followed by cancers (35.5%), chronic respiratory diseases (2.4%), and diabetes (2.1%). Overall ASPMR from all major NCDs declined from 740.8 per 100,000 in 2014 to 584.0 per 100,000 in 2023 (absolute reduction: 156.8 per 100,000; relative reduction: 21%). The trend was statistically significant (AAPC -5.8%; 95% CI: -7.49 to -4.14;  $p < 0.001$ ). ASPMR declined across all subgroups during 2014-2023: males (993.34 to 830.99 per 100,000; -162.35 or -16.3%); females (512.28 to 359.00 per 100,000; -153.28 or -29.9%); urban areas (675.45 to 501.56 per 100,000; -173.89 or -25.8%); rural areas (786.42 to 644.53 per 100,000; -141.89 or -18.0%). Between 2014 and 2023, the largest overall ASPMR decline occurred in Chişinău (-19.4%), followed by the Centre (-16.7%), North (-14.5%), and South (-12.8%). Cardiovascular diseases were the primary contributor across all regions. Despite improvements, the North and South regions exhibited persistently higher ASPMR than Chişinău, indicating regional disparities in premature NCD mortality.

**Conclusions.** The Republic of Moldova achieved substantial progress toward SDG 3.4, with a 21.2% decline in ASPMR primarily driven by improved cardiovascular disease control. Consistent improvements across all demographic and geographic strata reflect the effectiveness of national policies. Regional disparities require targeted interventions, including strengthening rural cardiology services, expanding cancer screening programs and health equity programs to meet SDG targets.

**Keywords:** noncommunicable diseases; premature mortality; age-standardized mortality rate; Republic of Moldova.

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## **HYGIENIC AND SOCIOLOGICAL ASSESSMENT OF TOYS FOR CHILDREN AGED 1-5 YEARS ON THE MARKET OF ARMENIAN REPUBLIC**

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**Introduction.** Toys play an essential role in the physical, cognitive, and social development of kids. However, they may also serve as a significant source of microorganisms, synthetic surfactants, and other chemical compounds. Children aged 1-5 years frequently place toys in their mouths, making oral contact one of the primary routes of exposure to hazardous substances.

**Aim of the study.** To conduct a hygienic assessment of selected toys intended for children aged 1-5 years available on the market of the Republic of Armenia and to perform a sociological survey.

**Material and methods.** The study consisted of two components: a sociological survey and a hygienic assessment. The sociological component included a survey of 114 parents of children aged 1-5 years to evaluate toy selection criteria, labeling awareness, toy care practices, and perceived health risks. Based on survey results, two soft toys were selected for laboratory assessment. Hygienic evaluated parameters included external appearance, presence of labeling and packaging, sensory characteristics, sound emission level, and pH changes in a saliva model solution immediately and after 24 hours of exposure and determination of synthetic surfactants using an express photometric method.

**Results.** The survey revealed that only 14.9% consistently read toy labels and safety information. When choosing toys, parents prioritized appearance, price, and manufacturer. Kids mostly preferred soft, brightly colored, and sound-emitting toys. 46.8% of respondents believed toys could present a health risk. Routine toy care was infrequent: most parents washed toys either about once a month or only 1-2 times per year. Hygienic assessment revealed multiple compliance issues. Toy N<sup>o</sup> 1 lacked any labeling; N<sup>o</sup> 2 had incomplete labeling. Sound emission from Toy 1 was higher than the recommended limit (82.6 dBA). Changes in pH of the saliva model after exposure remained within acceptable ranges for both toys; sensory indicators did not exceed the study threshold (score  $\leq 3$ ). Synthetic surfactants exceeded in Toy N<sup>o</sup> 1 (0.622 mg/L).

**Conclusions.** The conducted study demonstrated that some toys intended for children aged 1-5 years that are circulating on the market in the Republic of Armenia do not meet hygienic safety requirements. Inadequate labeling, as well as excessive acoustic and chemical factors, may pose potential health risks. Increasing parental awareness and strengthening control over toy safety are necessary from a preventive medicine perspective.

**Keywords:** toy safety, synthetic surfactants, preventive medicine, kids' health, saliva model, toy selection.

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## **AWARENESS OF LIFESTYLE-RELATED RISK FACTORS OF NON-COMMUNICABLE DISEASES AMONG ADOLESCENTS AGED 15-17 IN THE CITY OF YEREVAN**

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**Introduction.** Non-communicable diseases (NCDs) represent one of the leading public health priorities, accounting for approximately 74% of all deaths worldwide. Assessing adolescents' awareness of NCDs and their risk factors is crucial from a preventive perspective, as health-related behaviors established during this developmental stage may significantly influence their future health condition.

**Aim of the study.** The aim of this study was to assess the level of awareness of NCDs and their lifestyle-related risk factors among adolescents aged 15-17 years in the city of Yerevan, Armenia, to evaluate the association between their knowledge and lifestyle behaviors, and, based on the findings, to propose preventive measures aimed at promoting adolescent health and reducing risky behaviors.

**Material and methods.** An analytical cross-sectional study was conducted among 220 adolescents studying in three high schools in Yerevan. Data were collected using an adapted, self-administered structured questionnaire based on three internationally validated instruments and tailored to the socio-cultural context of Armenia. During the statistical analysis, Pearson's chi-square ( $\chi^2$ ) test and Fisher's exact test were applied, the latter when expected cell frequencies were small. For comparisons involving more than two groups, the chi-square test was performed using the Monte Carlo simulation approach. Data entry and statistical analysis were conducted using the SPSS-23 software.

**Results.** Overall, 82% of adolescents demonstrated sufficient general knowledge of NCDs, while knowledge regarding lifestyle-related risk factors, such as the absence of physical activity or sedentary lifestyle, tobacco use, alcohol use (abuse), unhealthy diet (fast food, soft drinks), obesity, was limited (56.6%). Health-promoting behaviors were observed in only 32.9% of participants. Statistically significant positive associations were found between adolescents' overall awareness and their age ( $p=0.045$ ), father's education level ( $p=0.003$ ), and mother's education level ( $p=0.032$ ), as well as between adolescents' health-promoting behaviors and maternal education level ( $p=0.026$ ) and self-rated health status ( $p=0.038$ ). No significant association was observed between awareness and health-promoting behaviors.

**Conclusions.** Despite a generally sufficient level of awareness of NCDs among adolescents, the prevalence of health-promoting behaviors remains low. The absence of an association between awareness and health-promoting behaviors suggests that knowledge alone is insufficient to induce behavioral change. Parental education level, particularly maternal education, plays a significant role in shaping adolescents' healthy lifestyles, highlighting the importance of family-based interventions, while age-related and sex-related characteristics emphasize the need for psychologically oriented interventions.

**Keywords:** non-communicable diseases, obesity, awareness, risk factors, adolescents, health-related behavior.

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## EXPOSURE TO ENDOCRINE DISRUPTORS: DISCREPANCIES BETWEEN AWARENESS LEVELS AND CUMULATIVE CHEMICAL RISK

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**Introduction.** Endocrine disruptors are chemical compounds capable of interfering with hormonal homeostasis and are associated with reproductive, metabolic, neurodevelopmental, and oncological disorders. Population exposure is widespread and results from the interaction of dietary, occupational, and behavioral factors. Educational level regarding chemical risk may influence the adoption of protective behaviors and the reduction of cumulative exposure.

**Aim of the study.** To assess the level of knowledge and awareness regarding endocrine disruptors and to estimate cumulative chemical risk.

**Material and methods.** A descriptive cross-sectional study was conducted on a sample of 176 participants. Data were collected using a structured questionnaire, including socio-demographic variables, level of information, ability to identify substances with potential endocrine-disrupting effects, sources and pathways of exposure, and daily behaviors associated with risk. The mean age of participants was  $42.9 \pm 11.2$  years (95% CI: 41.4-44.4 years).

**Results.** Among the participants, 70% reported occupational exposure to at least two chemical substances (detergents, cosmetic products, paints/lacquers, pesticides, plastics). Exposure ranged from no substances reported (15%) to the simultaneous exposure to seven distinct categories in a single individual, indicating a relevant cumulative potential from an occupational perspective. In the domestic environment, frequent use of plastic containers for heating food was reported by 55% of participants, non-stick cookware by 60%, and cosmetic/personal care products by 65%. Consumption of preserved or plastic-packaged foods was reported by 50-55% of respondents. Preventive measures, such as washing fruits and vegetables and daily ventilation of the home, were reported by over 60% of participants, whereas domestic use of pesticides was reported by no more than 35%. Regarding knowledge level, 60% of participants reported having heard of endocrine disruptors, and 65% provided a correct or partially correct definition. Pesticides were the most frequently identified endocrine disruptors (88%), followed by nitrates (65%) and phthalates/BPA (42-46%). Cosmetic and personal care products were indicated as the main sources of exposure (73%), followed by plastics (65%) and canned foods (42%). The most frequently reported exposure pathways were dietary ingestion (92%), dermal absorption (69%), and inhalation (58%). Based on a composite exposure score derived from the questionnaire, participants were classified into three risk categories regarding endocrine disruptor exposure: low risk – 13.6%, moderate risk – 61.9%, and high risk – 24.5%.

**Conclusions.** The results highlight a discrepancy between the moderate level of awareness and the prevalence of cumulative exposure to endocrine disruptors. The predominance of moderate and high risk supports the need for integrated, evidence-based educational interventions aimed at translating knowledge into concrete preventive behaviors. Strengthening chemical risk literacy may constitute a key strategy to reduce the burden of endocrine disruptor-related diseases at the population level.

**Keywords:** endocrine disruptors, cumulative chemical risk.

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## **RADON AS A RISK FACTOR IN THE TRIGGERING OF NON-COMMUNICABLE DISEASES**

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**Introduction.** The population's exposure to natural radioactive sources is primarily due to radon, a toxic substance in the environment, and poses a health risk. The radon problem remains important in the context of the dynamics of tumor incidence, especially lung cancer (LC). Radon-induced LC could be prevented in 35-40% of cases if the radon level in residential buildings were reduced below 100 Bq/m<sup>3</sup>.

**Aim of the study.** Determination of indoor radon concentrations and the main environmental factors.

**Material and methods.** The study material was indoor air (about 5 thousand homes and 451 educational institutions), the main environmental factors (water and soil), and building materials. Radiometric and spectrometric measurements were performed, the results being analyzed by the STATISTICA program.

**Results.** The database reflecting the radon concentrations, to which the population of the Republic of Moldova is exposed, in different types of housing/public buildings in rural/urban areas, was updated. New data were obtained regarding the argumentation of updating the national reference levels of indoor radon (300 Bq/m<sup>3</sup>) in the context of EURATOM Directive No. 2013/59/. Indoor radon mapping highlighted localities with increased risk to human health. The arithmetic mean values of radon concentration for the Center, North, and South areas were 211 Bq/m<sup>3</sup>; 244 Bq/m<sup>3</sup> and 286 Bq/m<sup>3</sup>, respectively. In the air of the high school education institutions, the indices studied varied within the limits of 26-427 Bq/m<sup>3</sup>, and in the early education institutions: 48-607 Bq/m<sup>3</sup>. The average value for the studied premises was 150.1 Bq/m<sup>3</sup> and 147.1 Bq/m<sup>3</sup>, respectively. Through cluster analysis, the interaction within the relationship "radon concentration x incidence/prevalence of lung cancer" was established. The national program/action plan for controlling the population's exposure to radon was developed. The study of radon concentrations in the main components of the environment (soil and water) elucidated some peculiarities of the spread of these radioactive elements. Thus, the concentration of radon in the soil varied depending on its type, and in the investigated waters (all types), it did not exceed the permissible values. Spectrometric analysis of 1538 samples of various building materials regarding the content of the main natural radionuclides: <sup>226</sup>Ra, <sup>232</sup>Th, <sup>40</sup>K and Aef demonstrated that the natural radioactivity in most of the investigated materials did not exceed the MAC, according to national norms, with the exception of the samples "ceramic tiles" and "granite/marble," where the maximum value of Aef varied in the limits of 337.0-460.0 Bk/kg. According to national norms, the MAC must not exceed 300 Bq/m<sup>3</sup>.

**Conclusions.** In order to reduce exposure to radon, it is imperative to control radon concentrations in indoor air and, in case of concentrations higher than the national reference level, to act appropriately by implementing the action plan for controlling radon exposure.

**Keywords:** radon, lung cancer, indoor air quality, radiation.

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## INFORMING THE POPULATION ON THE QUALITY AND COMPOSITION OF BOTTLED DRINKING WATER

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**Introduction.** In the Republic of Moldova, the consumption of bottled drinking water has experienced a constant increase in the last decade, driven by increasing concerns about the quality and safety of water supplied through the public supply system. Problems related to microbiological and chemical contamination of drinking water sources, influenced by insufficient infrastructure updating and the appearance of agricultural and industrial pollutants, have generated high confidence in bottled water. At the same time, national regulations on the physicochemical parameters of drinking water and labeling requirements have evolved, which requires an updated analysis of the chemical composition of the waters available on the Moldovan market. The evaluation of these parameters is essential both for consumer health and for correctly informing the population about mineral intake and potential risks associated with long-term consumption.

**Aim of the study.** Assess the level of information of the population regarding the quality of bottled drinking water, as well as promote better consumer information regarding the choice of bottled drinking water.

**Material and methods.** The study was a descriptive cross-sectional one, by applying an instrument that allowed the collection of the population's opinions on the quality of bottled drinking water. A questionnaire validated and previously tested in a pilot study was used. The study included a sample of 1575 participants.

**Results.** In the research, the questionnaire was completed by 65.5% women, and 65% of the respondents came from urban areas. Analyzing the level of information of the population, it was found that 61.6% of the participants are aware of the quality of the bottled drinking water they consume. Regarding the chemical composition of the water, 53.7% of the respondents stated that bottled drinking water contains mineral substances, and 69.7% believe that this information should be clear and visible on the packaging label. Regarding the choice of bottled drinking water, the minerals that influence consumers' decisions are, in descending order, magnesium (Mg) – 41.9%, calcium (Ca) – 36.6%, potassium (K) – 33%, and sodium (Na) – 30.4%. In addition, 37.3% of participants estimate that the pH value of bottled water is between 6.5 and 8.5, while 26.4% of them are not familiar with this characteristic.

**Conclusions.** Results highlight the variable level of public awareness and the need for additional educational measures regarding the quality and composition of bottled drinking water.

**Keywords:** bottled drinking water, chemical composition, public health, water, drinking water.

CZU:  
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## PESTICIDES AS HEALTH RISK FACTORS ASSOCIATED WITH NON-COMMUNICABLE DISEASES

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**Introduction.** Pesticides are chemical substances widely used in agriculture to control pests, but their intensive use causes contamination of soil, water and food. Population exposure can be occupational, residential or dietary. According to assessments carried out by the International Agency for Research on Cancer, some pesticides are classified as possibly or probably carcinogenic to humans. Non-communicable diseases are the leading cause of mortality globally, being responsible for approximately 74% of all deaths, according to the World Health Organization. Thus, investigating the relationship between pesticide exposure and non-communicable diseases is a public health priority.

**Aim of the study.** To assess the morbidity of the country's population and estimate the level of pesticide application as a risk factor associated with non-communicable diseases.

**Material and methods.** Articles published in national and international journals, the results of scientific studies, recommendations of international organizations regarding the assessment of pesticide exposure, association with non-communicable diseases, human biomonitoring studies were evaluated. Analytical methods were used to process and generalize the data, with the application of the electronic spreadsheet of the Microsoft Office Excel program.

**Results.** The vulnerability of the human body differs depending on the dose, duration of exposure, type of pesticide and characteristics of the exposed person (age, health status, etc.). Epidemiological evidence shows links between chronic exposure to pesticides and non-communicable diseases, including cancers, neurological disorders, endocrine dysfunctions, cardiovascular problems, respiratory diseases. Calculating the intensity of pesticide use in the last 10 years, it was established that on average 1.7 kg/ha were used annually in the country, and the quantity was around 2200 tons. Analyzing the statistical data on general morbidity for the same period, the increase in general prevalence is attested: from 9607.7 ‰ in 2014 to 11904.6 ‰ in 2023. Although behavioral factors (smoking, unhealthy diet, sedentary lifestyle) are well documented, in recent years there has been increased interest in environmental factors, including pesticide exposure, as determinants of these pathologies and requires further research.

**Conclusions.** Exposure to pesticides represents a significant risk to human health, affecting various systems and organs. Therefore, it is indispensable to raise public awareness of the risk of pesticides and the importance of their proper handling in order to prevent and even reduce their impact on health. Safety regulations require constant improvement and updating to reduce risks.

**Keywords:** non-communicable diseases, pesticides, risk, health, human body.

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## **MORBIDITY OF HEALTHCARE WORKERS PROFESSIONALLY EXPOSED TO IONIZING RADIATION – COMPARATIVE ANALYSIS**

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**Introduction.** Occupational exposure to ionizing radiation (IR) is a recognized risk factor for the health of medical personnel involved in radiology, interventional imaging, and nuclear medicine. Although annual doses are generally kept below regulatory limits, international literature indicates possible cumulative effects of chronic exposure to low doses, including an increased risk of hematological disorders, cataracts, and certain neoplastic pathologies. International evidence indicates associations between prolonged occupational exposure and malignant hematological disorders, cataracts, and possible immune system disorders. Morbidity assessment is an essential indicator in assessing the impact of occupational exposure on health.

**Aim of the study.** To assess the overall morbidity and temporary incapacity for work among healthcare workers occupationally exposed to ionizing radiation, compared to unexposed staff.

**Material and methods.** A cross-sectional study was conducted, covering medical personnel from public medical institutions in the Republic of Moldova with at least one year of work experience. Data from individual medical records and medical surveillance registers of workers occupationally exposed to ionizing radiation and a control group comparable in terms of age and sex were analyzed. The indicators evaluated included general morbidity, the nosological structure of diseases, and the frequency of temporary incapacity for work. The statistical analysis included descriptive methods and comparative tests ( $\chi^2$ ,  $p < 0.05$ ).

**Results.** For most exposed workers, effective annual doses did not exceed 1 mSv, in accordance with national regulations. However, compared to the control group, there was a tendency toward increased overall morbidity and an average number of cases of temporary incapacity for work among exposed personnel. The structure of the conditions was dominated by chronic noncommunicable diseases, particularly cardiovascular pathologies, metabolic disorders, and eye conditions. No significant differences were identified in the incidence of severe acute diseases; however, the frequency of minor hematological disorders was higher in the exposed group. These findings are consistent with data reported in international studies on the cumulative effects of chronic exposure to low doses of ionizing radiation on the health of medical staff.

**Conclusions.** Chronic occupational exposure to ionizing radiation, even when dosimetric limits are respected, may be associated with a slight increase in overall morbidity and temporary incapacity for work. The results support the need for continuous and integrated medical surveillance, as well as the strengthening of radiological protection measures to reduce long-term occupational risk.

**Keywords:** ionizing radiation, occupational exposure, morbidity, medical personnel, health risk.

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## **DIETARY INTERVENTIONS IN CHILDREN WITH AUTISM** **GARABA Mihaela, TAFUNI Ovidiu**

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**Introduction.** Nutrition is a crucial factor in children with autism spectrum disorders (ASD), particularly given the growing need for personalized and complementary interventions aimed at improving both physical health and behavioral outcomes. Advances in neuroscience and gut microbiology, especially regarding the gut-brain axis, further highlight the importance of tailored nutritional strategies.

**Aim of the study.** This study aimed to examine dietary interventions, including specific diets and eating patterns, and their association with gastrointestinal health and behavioral outcomes in children with ASD, providing additional insight into practical nutritional management approaches.

**Material and methods.** A cross-sectional, observational, descriptive study was conducted over three months, including 45 children aged between 2 and 15 years, diagnosed with ASD and attending behavioral therapy at the NGO “SOS Autism” in the Republic of Moldova. Dietary data were collected using food frequency questionnaires completed by the participants’ parents and analyzed descriptively, allowing evaluation of eating patterns, meal frequency, and nutrient intake.

**Results.** The analysis demonstrated that of the 45 children with ASD included in the study, 36 (80.0%) reported gluten intolerance, 2 (4.4%) had intolerance to cow’s milk proteins or casein, and 1 (2.2%) exhibited both intolerances, highlighting the need for nutritional adjustments. Regarding dietary patterns, 16 children (35.6%) followed a specific carbohydrate diet without dairy, 10 (22.2%) adhered to a gluten-free diet, 4 (8.9%) followed a casein-free diet, and 15 (33.3%) did not follow any diet adapted to their individual intolerances or nutritional requirements. Seventeen participants (37.8%) consumed three main meals and two snacks daily, indicating the importance of a structured meal plan to ensure adequate intake. Weekly consumption of meat, fish, and dairy products was reported 2-4 times per week by 24 children (53.3%). Fruits were consumed 1-2 times per day by 26 children (57.8%), while vegetables were consumed with the same frequency by 20 children (44.4%). These findings reflect the distribution and frequency of reported intolerances and dietary patterns observed within the study population.

**Conclusions.** A high prevalence of gluten intolerance and restrictive dietary patterns was observed, yet over one-third of participants did not follow individualized diets. Variability in meal structure highlights the importance of standardized nutritional guidance. These findings support the incorporation of individualized dietary assessments and targeted nutritional interventions into multidisciplinary management plans to optimize gastrointestinal and behavioral outcomes in children with ASD.

**Keywords:** autism spectrum disorder, interventions, diet, intolerance, behavior.

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## **PUBLIC AWARENESS AND DIETARY INTENTIONS REGARDING PROCESSED MEAT CONSUMPTION**

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**Introduction.** Processed meat consumption constitutes a significant public health issue due to its established association with an increased risk of cardiovascular and oncological diseases. The World Health Organization has classified processed meat as a Group 1 carcinogen, estimating that a daily intake of 50g may increase the risk of colorectal cancer by approximately 18%. Despite substantial evidence regarding its health risks, processed meat consumption remains widespread, mostly due to cultural habits and availability. Understanding public perception and awareness is essential for developing effective prevention strategies.

**Aim of the study.** To assess public awareness of health risks associated with processed meat consumption and the willingness to adopt healthier dietary behaviors among adults from the Republic of Moldova.

**Material and methods.** A quantitative cross-sectional study was conducted on a sample of 379 adult respondents using the CAWI (Computer-Assisted Web Interviewing) method via an online survey. The questionnaire included items related to knowledge of health risks, frequency of processed meat consumption, and attitudes toward dietary change. Descriptive statistical analysis was performed to interpret the collected data.

**Results.** The findings reveal that 83.1% of respondents were aware of the health risks associated with processed meat consumption. Despite this awareness, processed meat consumption remains prevalent, primarily due to palatability and convenience (61.8%). A majority of participants (65%) reported a willingness to modify their dietary habits, while 15.2% had already adopted a predominantly unprocessed meat consumption pattern. Furthermore, a high proportion of respondents (85.2%) reported the need for evidence-based nutritional recommendations. The results also suggest a gap between knowledge and actual behavioral change.

**Conclusions.** These findings underscore the need for enhanced nutritional education and the dissemination of evidence-based information through healthcare professionals to mitigate the health risks associated with processed meat consumption. Strengthening public health communication strategies may contribute to reducing the burden of non-communicable diseases.

**Keywords:** processed meat, health risks, awareness, dietary behaviors, nutritional education.

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## HOUSEHOLD WASTE SORTING AND WASTE MANAGEMENT BEHAVIOR IN ARMENIAN HOUSEHOLDS

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**Introduction.** The growing volume of municipal solid waste constitutes a significant global environmental, social, and public health challenge. In the Republic of Armenia, household waste management is hindered by limited infrastructure, behavioral factors, and inadequate public awareness of waste sorting practices. The effectiveness of sustainable waste management systems depends on both governmental policies and the behaviors, knowledge, and motivation present at the household level. Consequently, examining public attitudes, participation, and awareness regarding household waste sorting is essential.

**Aim of the study.** To assess the level of public awareness regarding household waste sorting among the population of the Republic of Armenia and to examine waste management behavioral practices within households.

**Material and methods.** The methodological basis of the study included a review of relevant scientific and analytical literature as well as a quantitative sociological survey. Data were collected through an online questionnaire distributed among residents of the Republic of Armenia. A total of 90 participants took part in the study.

**Results.** Among survey participants, 68.9% reported the presence of waste sorting containers in their residential yards. Regarding sorting practices, 41.1% reported never sorting waste, 40% reported sorting occasionally, 13.3% reported sorting frequently, and 5.6% reported always sorting waste. Among participants who reported sorting waste (N=53), 73.6% identified a sense of environmental responsibility or care for the environment as the primary motivating factor. When asked about the main barriers to waste sorting, 67.6% of non-sorting participants (N=37) indicated the absence of nearby sorting containers. Additionally, 62.2% expressed a lack of trust in responsible authorities regarding the proper recycling of sorted waste, while 32.4% reported insufficient space at home for waste sorting. Overall, 80% of participants stated that society is adequately and regularly informed about the negative consequences of not sorting waste.

**Conclusions.** The study demonstrates that household waste sorting behavior in Armenia is influenced by three primary factors: accessibility of sorting infrastructure, level of knowledge, and individual value systems. Higher educational attainment and increased awareness of proper waste management and correct sorting practices are associated with greater participation in source-level waste sorting. An important finding was the role of trust: low public confidence in the overall recycling process represents a significant demotivating factor for waste sorting.

**Keywords:** waste management, recycling, environmental health, health behavior, health knowledge, attitudes, practice, public health.

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## HEALTH RISK ASSESSMENT IN THE CONTEXT OF CLIMATE CHANGE

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**Introduction.** The Republic of Moldova is highly vulnerable to climate-related environmental risks that increasingly affect population health, particularly through the aggravation of non-communicable diseases. Climate change therefore represents a growing public health concern requiring evidence-based risk assessment and preventive interventions.

**Aim of this study.** To assess the impact of climate change-related environmental factors on population health in the Republic of Moldova, with a particular focus on health risk factors and implications for the prevention of non-communicable diseases.

**Material and methods.** A descriptive epidemiological study was conducted using monthly mean air temperature data and ambient air pollution indicators collected over the period 2002-2023 from three representative regions of the Republic of Moldova. Climate exposure variables comprised mean monthly air temperature and major ambient air pollutants (SO<sub>2</sub>, NO<sub>2</sub>, CO, hydrocarbons and total emissions). Health outcomes included general and cause-specific morbidity prevalence (per 10,000 population) for the same period. Pearson correlation analysis and descriptive comparisons between years with and without summer heat wave episodes were applied using aggregated annual and seasonal indicators.

**Results.** Mean general morbidity across all years was 11,195 per 10,000 population. In years with documented heat wave episodes, mean morbidity reached 11,395 per 10,000, compared to 10,806 per 10,000 in non-heat wave years, corresponding to an absolute increase of 589 per 10,000 (+5.5%). Cardiovascular disease prevalence ranged from 3,492 per 10,000 (2020) to 4,471 per 10,000 (2022), with a period mean of 4,041 per 10,000. Heat wave frequency showed a moderate positive correlation with general morbidity prevalence ( $r=0.39$ ), while the association with cardiovascular morbidity was weak ( $r=-0.12$ ). Mean annual temperature demonstrated weak correlations with general morbidity prevalence ( $r=0.22$ ,  $p=0.680$ ). In contrast, climate-related air pollution indicators exhibited strong associations with morbidity prevalence, particularly sulfur dioxide ( $r=0.93$ ,  $p=0.006$ ), nitrogen dioxide ( $r=0.90$ ,  $p=0.013$ ) and total air pollutants ( $r=0.84$ ,  $p=0.035$ ). Disease-specific analyses identified the highest correlation coefficients for cardiovascular, respiratory and endocrine-metabolic diseases ( $r$  up to 0.93), indicating a cumulative, environmentally mediated climate-health effect.

**Conclusions.** The analysis indicates a measurable association between heat wave frequency and increased population morbidity, supporting the relevance of heat-related climate hazards as a public health risk in the Republic of Moldova.

**Keywords:** climate change, heat waves, population morbidity, public health, risk assessment.

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## MENTAL FATIGUE – RISK FACTOR FOR NON-COMMUNICABLE DISEASES

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**Introduction.** Mental fatigue, called the disease of our century, occurs as a result of chronic stress, cognitive overload, and lack of adequate recovery. Over a longer period of time, it becomes a major risk factor for non-communicable diseases. It can be caused by: the intensity and duration of physical and intellectual work; environmental factors (temperature, noise, and lighting); psychological factors (responsibilities, worries, and conflicts); monotony or routine work; diseases and pains, nutritional conditions. Forms of fatigue manifestation are: decreased attention; slowing down and inhibition of perception; inhibition of thinking capacity; decreased efficiency of physical and intellectual activity.

**Aim of the study.** Identifying factors that favor the appearance of fatigue in workers in the field of information technologies and assessing its level from a subjective point of view. Preventing this condition and trying to minimize it.

**Material and methods.** Direct observation method, questionnaire method, statistical and comparative method. The questionnaire included 22 items. The selection of people for this research was done through simple random selection. A total of 74 people were surveyed. Each person answered 22 questions, each answer being evaluated with points from 0 to 5.

**Results.** Of the 74 people participating in the study, 50 people (67.6%) were 20-29 years old, 14 people (18.9%) in the 30-39-year-old category, 5 people (6.75%) 40-49 years old and 5 people (6.75%) in the 50-year-old and older category. By gender, there are 22 more women, which represent 30%. After analyzing the results, we highlighted: 20 people (27%) accumulated between 20-49 points (this means that they are starting to feel some signs of fatigue); 52 people (70%) scored between 50-79 points (which already indicates a moderate level of overwork); 2 people (3%) had a score of 80-100 points (which indicates that the overwork is fully manifested and they need a specialist), the most frequently affected age group is 20-29 years old.

**Conclusions.** Practically all people involved in the study showed some signs and symptoms of fatigue; the most affected age group is 20-29 years old, the younger generation is increasingly vulnerable, we identified problems related to the action of fatigue on the body, namely: depressive states, concentration and memory disorders, exhaustion, headache, tachycardia, palpitations; we studied the problem of these people in detail and came up with a series of measures that could improve the situation.

**Keywords:** fatigue, work, factors, condition.

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## **REDUCING MEDICATION ERRORS IN THE HOSPITAL ENVIRONMENT - A STRATEGY FOR OPTIMIZING THE MANAGEMENT OF NON-COMMUNICABLE DISEASES**

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**Introduction.** Patient safety is a cornerstone of modern healthcare, yet medication errors pose a significant public health challenge globally. These errors encompass complex issues that can disrupt the therapeutic process at various stages, from prescription through to administration. In the Republic of Moldova, the underreporting of medication errors—often exacerbated by a punitive organizational culture and fear of professional repercussions—impedes thorough analysis of root causes and hampers necessary preventive measures.

**Aim of the study.** To identify the factors associated with medication errors in nursing practice and to explore methods for reducing these errors in the hospital environment of the Republic of Moldova.

**Material and methods.** A mixed-methods design was utilized, combining quantitative and qualitative approaches. Data collection took place from September 2025 to January 2026, involving 105 nurses from high-risk departments, including Surgery, Traumatology, and Intensive Care Units, from Emergency Medicine Institute, *Chiril Draganiuc* Pneumology Institute, and the Trauma and Orthopedics Clinical Hospital. The quantitative phase employed a structured questionnaire with 25 items, while qualitative insights were gathered through a focus group of six nurses discussing systemic reporting barriers. Statistical analysis was performed using Microsoft Excel to compute descriptive statistics, including mean scores and standard deviations.

**Results.** The findings indicated that systemic and organizational factors significantly impact medication safety, with the highest risk attributed to staff shortages (78.1%), high workload (74.3%), and professional fatigue. A noteworthy gap existed between error recognition and formal reporting: 82.9% of respondents acknowledged encountering errors, yet only 4.76% completed official reports, preferring informal team discussions (15.24%). There was strong agreement on the need for digital solutions; 55.2% of participants deemed electronic prescribing and barcode medication administration crucial for reducing human error. Additionally, qualitative data highlighted that fear of stigma significantly hinders transparency in reporting.

**Conclusions.** Medication errors are systemic issues influenced by human, organizational, and technological factors. Nurses play a critical role as the final safety barrier in medication administration. Enhancing this role requires a multifaceted strategy, including procedural standardization, digital verification technologies, and the establishment of a non-punitive reporting culture. Encouraging interdisciplinary collaboration and ongoing education in pharmacovigilance are essential for improving healthcare quality and ensuring patient safety in the Republic of Moldova.

**Keywords:** medication errors, nursing practice, hospital environment.

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## ASSESSING PROGRESS IN NON-COMMUNICABLE DISEASE SURVEILLANCE IN THE REPUBLIC OF MOLDOVA: NATIONAL TRENDS AND POLICY IMPLICATIONS

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**Introduction.** Non-communicable diseases (NCDs) represent the leading cause of mortality and disability in the Republic of Moldova, occurring in the context of rapid demographic aging, depopulation, and persistent health inequalities. In 2024, NCDs accounted for 87% of total deaths, with cardiovascular diseases (57%), cancers (16.2%), digestive diseases (9.6%), and chronic respiratory diseases (4.4%) predominating. Despite post-pandemic stabilization, mortality levels remain substantially higher than the European Union average.

**Aim of the study.** To assess recent trends in mortality and morbidity due to priority NCDs in the Republic of Moldova and to identify strategic directions for strengthening national surveillance and prevention policies.

**Material and methods.** A descriptive epidemiological analysis (2014-2024) was conducted on demographic indicators, overall and cause-specific mortality, premature mortality (30-69 years), incidence and prevalence of priority noncommunicable diseases, and territorial disparities. Data was extracted from official national statistical platforms and annual statistical reports, including the National Bureau of Statistics, the National Agency for Public Health, and monitoring reports of national health programs. Additional comparative indicators were obtained from international databases, including the WHO European Health Information Portal and the WHO Mortality Database.

**Results.** Between 2014 and 2024, Moldova experienced a sustained demographic decline, with population aging increasing from 17.5% to 25.2% (population aged 60+). Life expectancy reached 72 years in 2024, but remains over 10 years below that of leading European countries. Cardiovascular mortality, although decreasing from the 2021 peak, remained extremely high at 786.7 per 100,000 population in 2024, over twice the European average. Cancer mortality increased steadily to 240.4 per 100,000, while incidence nearly doubled over the decade. Digestive diseases and diabetes continue to generate substantial premature mortality, particularly among working-age males. Marked territorial and gender disparities persist, with premature mortality among men approximately twice that of women.

**Conclusions.** The combined impact of population aging, persistent behavioral risk factors, and regional inequities sustains a high burden of non-communicable diseases in the Republic of Moldova. Strengthening integrated NCD surveillance systems, enhancing intersectoral governance, mobilizing sustainable financing, and intensifying primary prevention strategies are critical to accelerate progress toward Sustainable Development Goal target 3.4. Comprehensive, data-driven public health action is imperative to reverse premature mortality trends and improve population health resilience.

**Keywords:** non-communicable diseases, premature mortality, cardiovascular diseases, cancer, demographic aging, health governance, Moldova.

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## POPULATION HEALTH PROFILE AS A PUBLIC HEALTH TOOL: FROM EVIDENCE TO LOCAL ACTION

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**Introduction.** The burden of non-communicable diseases (NCD) requires is the main cause of mortality in the Republic of Moldova (87%). A multisectoral approach and evidence-based planning tailored to the local context is essential for "best buys" public health interventions. In this context, the Population Health Profiles (PHPs) at the administrative-territorial unit level (35 districts and 2 municipalities) were developed with the Swiss Healthy Life Project (HLP) support.

**Aim of the study.** To strengthen the capacities of public health specialists on the use of these tools so that resources can be channeled through robust plans tailored to local realities.

**Material and methods.** A retrospective and descriptive analysis of 42 health and well-being indicators, including demographic, morbidity, social, and environmental factors for the 2013-2024 years, was conducted for the 35 districts and two municipalities, with updating in 5 years.

**Results.** The updated PHP at national level shows a clear downward trend in mortality from acute and chronic ischemic heart disease between 2021 and 2024 when it dropped to 355.2 deaths per 100,000 inhabitants, which is 28.3% lower than in 2021. However, the analysis of health indicators over the last 5 years revealed a concerning increase in obesity prevalence, both among adults (by 30%) and children (by 40.7%), highlighting an emerging public health challenge that requires immediate and coordinated interventions. Important regional and gender disparities persist, particularly in adulthood, with mortality among men being approximately twice as high as among women. Based on the evidence generated through the PHPs, multidisciplinary working groups were created to develop and implement Health Promotion and NCD prevention Action Plans in 110 communities across the country. These positive trends are largely associated with the implementation of public health policies and prevention measures targeting noncommunicable diseases.

**Conclusions.** The PHPs is a practical tool, facilitating multisectoral approach and evidence-based planning, ensuring public health governance and promoting the "Health in All Policies" at the level of local public authorities. The development and regular updating of PHPs contribute to monitoring the prevalence of NCDs trends and identifying regional risk factors.

**Keywords:** health profile, non-communicable diseases, public health, evidence, local policies.

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## POPULATION AGEING IN THE REPUBLIC OF MOLDOVA: TRENDS, DETERMINANTS AND REGIONAL DISPARITIES (1959-2024)

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**Introduction.** Population ageing represents one of the most significant structural transformations of the population in the Republic of Moldova and an important determinant of public health. The principle of active ageing is reflected in national programmes and policies, including the National Health Strategy "Health 2030" and the National Programme on Active and Healthy Ageing for 2023-2027.

**Aim of the study.** To analyse the evolution of the population ageing process in the Republic of Moldova since the late 1950s, its differentiation across socio-demographic characteristics, and the main factors contributing to its development.

**Material and methods.** The study is based on population census data conducted in the Republic of Moldova during the Soviet period (1959, 1971, 1979, 1989) and the period of independence (2004, 2014, 2024). Several indicators of population ageing, including median age, ageing coefficient and dependency ratio, were calculated by sex, place of residence (urban/rural) and region. The main demographic determinants of ageing – fertility, mortality and migration – were analysed using total fertility rates, abridged life tables and net migration rates.

**Results.** In 2024 compared with 1959, the proportion of the population aged 60 years and over increased from 7.7% to 25.7%, while the proportion of children aged 0-14 years decreased from 33.4% to 19.2%. The median age rose from 24.7 years in 1959 to 29.4 years in 1989, 35.8 years in 2014 and 41.4 years in 2024. The ageing process was more pronounced among females and in rural areas. Regionally, the northern part of the country was more affected by ageing than other regions. The sex ratio among older persons increased moderately (from 58.1 in 1959 to 66.1 in 2024), reflecting persistently higher mortality among older males. Fertility decline and negative net migration remain the main drivers of population ageing, particularly in rural areas and the central region. Improvements in life expectancy contributed to ageing to a lesser extent and were mainly observed in the northern region and the municipality of Chisinau.

**Conclusions.** Population ageing in the Republic of Moldova has accelerated significantly over the past six decades, with marked territorial and gender disparities. The process is primarily driven by sustained low fertility and intensive emigration, while gains in life expectancy play a secondary role. These trends highlight the need to strengthen policies promoting active and healthy ageing, reduce regional inequalities and adapt the health and social care systems to the growing proportion of older persons.

**Keywords:** demographic ageing process, population structure, regional inequalities, Republic of Moldova.

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## CARDIOVASCULAR MORTALITY TRENDS AMONG THE ELDERLY POPULATION IN THE REPUBLIC OF MOLDOVA: IMPLICATIONS FOR PUBLIC HEALTH

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**Introduction.** Improvements in overall mortality observed in the Republic of Moldova since 2005 in females and 2010 in males were interrupted by the COVID-19 pandemic in 2020-2021. In the post-pandemic period, mortality returned to pre-pandemic levels. Although working-age mortality has traditionally shaped Moldova's mortality pattern, old-age mortality, particularly from cardiovascular diseases, has become an increasingly important driver of recent changes.

**Aim of the study.** To analyse trends in cardiovascular mortality among people aged 60 years and over since 2014 and to assess disparities by sex, place of residence (urban/rural), and region.

**Material and methods.** Using depersonalised medical death certificate data provided by the National Agency for Public Health and the official estimates of the usual resident population, age-specific death rates among individuals aged 60 years and over were calculated by cardiovascular cause of death, sex, residence, and region. Rates were age-standardised by the direct method using the 2013 European standard population. 95% confidence intervals were computed using the Dobson method.

**Results.** Cardiovascular mortality in both sexes was predominantly driven by ischaemic heart diseases, which accounted for more than 60% of deaths, followed by cerebrovascular diseases (25%) and hypertensive heart disease (13% in males and 11% in females). Over the study period, the age-standardised cardiovascular mortality rate among males declined by 10%, from 5,979 (95% CI: 5,837-6,122) per 100,000 in 2014 to 5,375 (5,230-5,522) in 2023. Among older females, the reduction reached 13%, with the rate decreasing to 4,372 (4,279-4,466) per 100,000 in 2023. These overall improvements were partly offset by a statistically significant increase in mortality from hypertensive heart disease in both sexes. A more detailed examination revealed that a considerable proportion of deaths attributed to ischaemic heart disease were classified under the non-specific ICD-10 code I25.8 ("Other forms of chronic ischaemic heart disease"), suggesting limited diagnostic specificity in cause-of-death reporting. The decline in cardiovascular mortality was more pronounced in urban areas, particularly in the municipality of Chisinau, whereas rural areas and the northern and central regions showed more modest progress, indicating persistent territorial disparities.

**Conclusions.** Cardiovascular diseases remain the leading cause of death among older adults in the Republic of Moldova. Despite modest improvements, marked sex, regional, and urban-rural disparities persist. The high share of non-specific cardiovascular coding suggests potential limitations in cause-of-death certification. Targeted public health policies are needed to reduce territorial inequalities and strengthen cardiovascular prevention and reporting quality at older ages.

**Keywords:** cardiovascular mortality, elderly population, causes of death, Republic of Moldova.

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## HYGIENIC RESEARCH IN ASSESSING RISK FACTORS FOR NON-COMMUNICABLE DISEASES

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**Introduction.** The identification and characterization of disease-specific risk factors represent a fundamental priority in modern public health. Understanding how determinants influence the occurrence and progression of noncommunicable diseases (NCDs) enables the development of evidence-based prevention strategies.

**Aim of the study.** To synthesize hygienic research in order to identify and characterize modifiable environmental, behavioral, occupational, and nutritional risk factors associated with the development and prevalence of noncommunicable diseases.

**Material and methods.** The study is based on a long-term observational epidemiological research framework conducted since 2000 at the Hygiene Department of Nicolae Testemitanu SUMPh. The methodology follows the principles of environmental medicine, examining environmental, behavioral, occupational, and nutritional factors as determinants of population health and specific NCDs. This work does not represent a single primary dataset but provides an integrative synthesis of accumulated evidence to identify consistent risk factors-disease relationships and support preventive public health strategies.

**Results.** The synthesis of long-term hygienic and epidemiological investigations demonstrates consistent associations between environmental, behavioral, occupational, and nutritional factors and the prevalence of major NCDs in the Republic of Moldova. Drinking water composition was associated with urinary lithiasis and general morbidity, including musculoskeletal conditions such as osteoarthritis. Populations in environmentally vulnerable areas, including those along the Prut River, showed higher disease burden linked to environmental exposures. Air pollution and heavy metals (lead, mercury) were associated with increased respiratory, cardiovascular, and allergic diseases across population groups. In children and adolescents, school environmental conditions and behavioral factors, including prolonged computer use, were linked to chronic respiratory and functional disorders. Nutritional studies identified micronutrient deficiencies, particularly iron and folic acid, as contributors to impaired health status. Occupational and radiation hygiene studies further demonstrated associations between workplace and environmental exposures and morbidity patterns. Overall, the findings indicate that a substantial proportion of NCDs is associated with modifiable risk factors.

**Conclusions.** Long-term observational evidence confirms the significant role of modifiable environmental and lifestyle-related risk factors in the burden of NCDs. Comprehensive assessment of these determinants is essential for effective prevention. Strengthening integrated public health strategies and interdisciplinary collaboration is critical for reducing NCD prevalence and improving population health outcomes.

**Keywords:** risk factors, noncommunicable diseases, environmental health, occupational health, prevention.

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## **PREVALENCE OF BURNOUT SYNDROME AND ITS CONTRIBUTING FACTORS AMONG STUDENTS**

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**Introduction.** Burnout syndrome among students is a growing public health concern. It is characterized by a feeling of emotional exhaustion, cynicism toward learning, and decreased academic performance. Medical students are particularly under pressure due to their academic workload and the emotional demands of clinical work. There is no clear information in Armenia on how prevalent the syndrome is among students, especially in terms of comparing medical and other fields of study.

**Aim of the study.** The aim of the study is to determine the prevalence of burnout syndrome among YSMU (Yerevan State Medical University) and YSU (Yerevan State University) students and to consider the impact of possible contributing academic, lifestyle, and psychosocial factors.

**Material and methods.** Using online questionnaires, a survey was conducted among 160 students, 100 of whom were from YSMU and 60 from YSU. Burnout was assessed using the Maslach Burnout Inventory-Student Survey (MBI-SS), which evaluates emotional exhaustion, cynicism, and academic efficacy on a 6-point frequency scale. The other part of the questionnaire included questions on the level of academic stress, duration and quality of sleep, work engagement, physical activity, screen time, and perceived social support.

**Results.** Among YSMU students, the mean score for emotional exhaustion on the 6-point MBI-SS scale was 3.91, indicating a high level. Cynicism was moderate - an average of 2.02, while academic efficiency remained quite high - an average of 4.54. It is noteworthy that nightly sleep in this group was less than 6 hours in 49% of the students. Among YSU, the mean emotional exhaustion score was 3.48, cynicism towards lessons was moderate - an average of 2.44, and academic efficiency was also high - an average of 4.42. In general, the syndrome was observed almost equally among YSU and YSMU students, but it was more pronounced in the case of YSMU students, especially with emotional exhaustion.

**Conclusions.** Burnout syndrome is moderately prevalent among students at both universities and is thought to be closely related to academic workload, stress, and insufficient sleep. The high rate of emotional exhaustion among medical students is likely related to the more demanding nature of medical education. Regular screenings by universities to assess burnout and stress levels, as well as education on stress management and sleep hygiene, may reduce the risk of developing burnout and improve academic performance.

**Keywords:** burnout syndrome, students, MBI-SS, academic stress, sleep.

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## **STRESS, BURNOUT, ANXIETY AND DEPRESSION AMONG SCHOOL TEACHERS IN ARMENIA**

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**Introduction.** Teacher mental health is an increasingly recognized public health concern worldwide. Chronic occupational stress, high workload, and emotional demands place teachers at risk of burnout, anxiety, and depression. However, data on the prevalence and associated factors of these conditions among school teachers in Armenia remain limited.

**Aim of the study.** To assess the prevalence of stress, burnout, anxiety, and depressive symptoms among school teachers in Armenia and to examine their association with socio-demographic and occupational factors.

**Material and methods.** A cross-sectional anonymous online survey was conducted among 151 school teachers using Google Forms. The questionnaire included socio-demographic data (sex, age, marital status, work experience, subject area, school location, presence of students with special educational needs) and Likert-scale items evaluating stress, burnout, anxiety, and depression. Composite scores were calculated as percentages of maximum possible scores. Comparative analysis was performed by sex, work experience, school location, and other occupational factors.

**Results.** Among respondents, 88.1% were female and 77.5% worked in rural schools. Moderate to high levels of psychological distress were identified: stress – 56.1%, burnout – 51.3%, anxiety – 57.9%, depression – 57.9%. Female teachers demonstrated higher levels across all domains compared to males. Teachers with 11-20 years of experience had the highest stress levels, while those with over 20 years showed higher burnout and anxiety. Urban teachers reported higher stress than rural teachers. Working with students with special educational needs was associated with increased stress. Frequent somatic complaints included headaches, musculoskeletal pain, sleep disturbances, and cardiovascular symptoms.

**Conclusions.** Armenian school teachers experience considerable psychological distress influenced by occupational and demographic factors. Preventive interventions and school-based mental health support programs are recommended.

**Keywords:** stress, burnout, anxiety, depression, teachers, occupational health.

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## SUN PROTECTION FACTOR USE AND AWARENESS OF UV RISKS IN ARMENIA

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**Introduction.** In recent years, climate change and depletion of the ozone layer have led to increased exposure to ultraviolet (UV) radiation. Consequently, human health, particularly the skin and eyes is at greater risk. Despite this, many individuals underestimate the harmful effects of sun exposure and fail to use sun protection products regularly. This issue is especially concerning for children and adolescents, whose skin is more sensitive and more susceptible to damage. Moreover, epidemiological data indicate a steady increase in the incidence of skin cancer, highlighting the seriousness of the problem. Therefore, the use of sun protection products is not merely a cosmetic practice but an essential preventive health measure. Increasing public awareness and promoting appropriate sun-protection habits are important public health priorities.

**Aim of the study.** To assess how frequently and under what circumstances individuals use sun protection factor (SPF) products and to evaluate their attitudes toward their use.

**Material and methods.** A total of 114 individuals participated in the survey. Data were analyzed using basic statistical methods, including percentage distribution and comparative analysis. Ethical standards were maintained throughout the study, ensuring the confidentiality and anonymity of all participants.

**Results.** The findings demonstrated that SPF use among the population of Armenia is insufficient. Although some respondents were aware of the harmful effects of UV radiation, the use of sun protection products was largely irregular and seasonal. SPF was applied only during summer months by 35.8% of respondents and only under intense sun exposure by 14.7%, indicating limited understanding of the need for consistent use. Furthermore, 49.5% of participants lacked adequate knowledge regarding correct application, particularly the necessity of reapplication. The main reasons for not using SPF products included insufficient awareness, underestimation of their importance, and, in some cases, financial or accessibility limitations.

**Conclusions.** Although a certain level of awareness exists, it remains inadequate. Educational and informational interventions are necessary to improve public knowledge and encourage responsible SPF use. Enhancing accessibility and promoting convenient formulations, such as sprays for the body and lightweight or gel-based products for the face, may contribute to more consistent use.

**Keywords:** sun protection factor, ultraviolet radiation, skin cancer, photoprotection, public health, Armenia.

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## REVALENCE OF METEOSENSITIVITY AMONG RESIDENTS OF THE SHIRAK REGION, ARMENIA

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**Introduction.** Meteosensitivity refers to the body's response to changes in weather conditions and may manifest with a range of symptoms that affect daily functioning and overall well-being. The Shirak region of Armenia is a high-altitude area characterized by frequent and abrupt fluctuations in temperature and atmospheric pressure. Based on these climatic features, a higher prevalence of meteosensitivity could be expected among the local population. However, data on meteosensitivity in Armenia are scarce, which underlines the importance of conducting region-specific studies.

**Aim of the study.** To assess the prevalence of meteosensitivity among residents of the Shirak region across different age groups and to formulate recommendations to improve adaptive responses to weather-related changes.

**Material and methods.** A cross-sectional survey was conducted among residents of the Shirak region. Data were collected using a structured questionnaire covering demographic characteristics, presence of chronic diseases, and self-reported weather-related symptoms. The results were analyzed using descriptive statistical methods and compared with data from relevant scientific literature.

**Results.** A total of 200 residents participated in the study. Of these, 100 were younger than 35 years and 100 were older than 35 years. Most respondents described their daily rhythm of life as moderately stressful. Chronic diseases were reported by 14% of participants, predominantly among those older than 35 years. Weather-related changes in well-being were reported by 73% of respondents. The main triggering factor was abrupt changes in air temperature, and the most frequently reported symptoms were weakness and drowsiness. Weather conditions had a moderate impact on mood. Symptoms were reported mainly during autumn and spring. More than half of respondents (55%) did not use any measures to alleviate symptoms, and only 30% were familiar with the term "meteosensitivity." An impact on work performance was reported by 70% of participants.

**Conclusions.** Although the Shirak region is characterized by pronounced climatic variability, the findings did not indicate an extremely high prevalence of meteosensitivity compared with data reported from other regions. This may be partially explained by long-term adaptation of the local population to high-altitude climatic conditions. Nevertheless, the observed impact on quality of life and work performance highlights the need for improved public awareness and the development of preventive and adaptive strategies tailored to regional climatic characteristics.

**Keywords:** meteosensitivity, atmospheric factors, chronic diseases, changes in well-being, quality of life.

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## HEALTH-RELATED QUALITY OF LIFE AND MENTAL HEALTH IN ADULTS WITH CONGENITAL HEART DISEASE IN THE REPUBLIC OF ARMENIA

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**Introduction.** In the Republic of Armenia, systematic data regarding health-related quality of life (HRQoL) among adults with congenital heart disease (ACHD) have been limited. Advances in cardiology and cardiac surgery have significantly improved survival rates, however, long-term physical, psychological, and social outcomes remain insufficiently explored in the Armenian context.

**Aim of the study.** To assess health-related quality of life and mental health among adults aged 18–55 years with congenital heart disease who are under follow-up at the Nork-Marash Medical Center in Yerevan, Armenia.

**Material and methods.** A quantitative, analytical cross-sectional study was conducted. The target population consisted of adults aged 18–55 years diagnosed with congenital heart disease. A total of 223 patients were recruited using convenience sampling. Data collection was carried out at the Nork-Marash Medical Center between June and November 2025. Health-related quality of life was assessed using the validated SF-36 questionnaire, which includes 36 items across eight domains. Sociodemographic and clinical data were also collected. Statistical analysis was performed using IBM SPSS Statistics 2023, applying the Kruskal-Wallis test, Mann-Whitney U test, and chi-square test. Statistical significance was set at  $p < 0.05$ .

**Results.** The median age of participants was 29 years, and 52.5% were female. Overall HRQoL was rated as moderate, with a tendency toward lower scores. The mean scores for the mental and physical component summaries were  $43.9 \pm 6.8$  and  $48.4 \pm 8.7$ , respectively. Significant associations were observed between the physical component and several clinical factors, including CHD type ( $p = 0.018$ ), presence of comorbidities ( $p = 0.046$ ), earlier age at diagnosis and surgical correction ( $p = 0.001$  and  $p = 0.003$ ), number of prescribed medications ( $p = 0.006$ ), higher functional class of heart failure ( $p = 0.004$ ), presence of arrhythmias ( $p = 0.019$ ), implantation of a pacemaker or defibrillator ( $p = 0.001$ ), and presence of a mechanical heart valve ( $p = 0.028$ ). Higher educational level and being unmarried were also significantly associated with better physical component scores ( $p = 0.018$  and  $p = 0.024$ , respectively). Gender was the only factor significantly associated with the mental component, with lower scores observed among female participants ( $p = 0.001$ ).

**Conclusions.** In Armenia, health-related quality of life among adults with congenital heart disease is strongly influenced by clinical status, sociodemographic characteristics, and psychosocial factors. These findings highlight the importance of a multidisciplinary approach and the integration of psychological support into the long-term management of this population.

**Keywords:** adult congenital heart disease, health related quality of life, SF-36 health survey, congenital heart disease.

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## **PILOT VALIDATION OF A QUESTIONNAIRE ON RADON RISK AWARENESS AND CLIMATE-RELATED DETERMINANTS OF INDOOR RADON EXPOSURE**

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**Introduction.** Indoor radon exposure is a major environmental risk factor for lung cancer, while climatic conditions and building characteristics can influence radon accumulation in residences. Assessing public awareness, perceptions, and behavioral responses requires reliable and methodologically validated survey instruments. However, validated questionnaires simultaneously addressing radon knowledge, housing characteristics, and climate-related perceptions remain limited.

**Aim of the study.** To pilot and evaluate a statistical validation framework for the questionnaire designed to assess radon awareness, perceived environmental and climatic influences, housing characteristics, and self-reported health indicators among residents.

**Material and methods.** A pilot cross-sectional study was conducted in 20 residential dwellings (10 detached houses and 10 apartments on first floors) in Chişinău, Republic of Moldova in summer 2025. The questionnaire comprised six thematic sections covering dwelling characteristics, indoor environmental conditions, health status of residents, knowledge of radon risks, perception of climate-related influences, and sources of environmental health information. Radon concentration and indoor microclimate parameters were measured instrumentally. Responses were coded using Likert-type scales. Due to non-normal data distribution, nonparametric statistical methods were applied. Internal consistency was assessed using Cronbach's alpha, construct and behavioral validity were examined using Spearman correlation, and differences between dwelling characteristics were analyzed using Mann-Whitney tests to evaluate the feasibility of the validation algorithm.

**Results.** The questionnaire demonstrated good internal consistency for radon knowledge items (Cronbach's  $\alpha=0.79$ ) and moderate reliability for self-reported health indicators ( $\alpha=0.61$ ), while climate-related perception items showed low internal consistency ( $\alpha=0.41$ ). Radon concentrations differed significantly according to basement construction material ( $p=0.018$ ). Radon awareness was positively associated with testing behavior ( $p<0.05$ ) and reported mitigation measures ( $p<0.05$ ), supporting behavioral validity.

**Conclusions.** The statistical validation algorithm proved feasible and informative for pilot testing of multidimensional environmental health questionnaires. The instrument demonstrated acceptable preliminary validity but requires refinement of conceptually heterogeneous item groups. To ensure robust validation, future revisions should expand and align climate-related items, increase the number of indicators, and confirm psychometric performance in larger and more heterogeneous population samples.

**Keywords:** radon exposure, questionnaire validation, pilot study, climate-related influence.

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## **PUBLIC HEALTH PREVENTION OF RADON EXPOSURE: INTEGRATED STRATEGIES FOR RESIDENTIAL BUILDINGS**

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**Introduction.** Radon is a naturally occurring radioactive gas and the main source of ionizing radiation exposure for the general population. The principal indoor source is soil and underlying geology beneath buildings; additional contributors include groundwater and certain construction materials such as concrete, bricks, natural stone, gypsum, slag, and fly ash. Variability in sources and transport mechanisms influences the effectiveness of prevention and mitigation measures.

**Aim of the study.** To systematize practical strategies for radon prevention and mitigation in residential buildings, with emphasis on reducing public health risks.

**Material and methods.** Regulatory provisions, technical guidance, and measurement protocols concerning radon control were examined. Approaches for assessing radon potential, testing buildings, applying radon-resistant construction techniques, and implementing mitigation measures in existing dwellings were analyzed in relation to building characteristics, climatic conditions, and reference levels.

**Results.** Effective radon control requires both preventive measures in new buildings and remediation in existing ones. Radon potential can be assessed through regional mapping or site-specific investigations before construction, allowing the determination of appropriate protection levels. Testing of new buildings is recommended before occupancy, when corrective actions are easier to implement, and after occupancy to confirm compliance with reference levels and long-term system performance. Preventive techniques include passive or active soil depressurization, sealing of surfaces and joints, installation of radon barriers and membranes, ventilation systems, drainage systems, and water treatment when necessary. Radon-resistant construction typically incorporates a gas-permeable layer, anti-radon membrane, sealing elements, vent pipe, and ventilation systems. In existing buildings, mitigation focuses on active soil depressurization, improved ventilation, sealing of cracks and openings, and treatment of radon in water. Measures must be selected based on standardized radon measurements and adapted to specific building features and radon entry pathways. Older or poorly insulated houses are generally more vulnerable. According to WHO and national recommendations, action is strongly advised when indoor radon exceeds 300 Bq/m<sup>3</sup>. For levels between 100-300 Bq/m<sup>3</sup>, improved ventilation and behavioral changes are recommended, while concentrations above 300 Bq/m<sup>3</sup> require structural remediation.

**Conclusions.** Integration of radon potential assessment, radon-resistant construction, systematic testing, and targeted mitigation is essential for sustainable reduction of radon exposure and effective public health protection.

**Keywords:** radon prevention, public health protection, radon mitigation, indoor air quality, radon-resistant construction.

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## CONTRIBUTION OF INTEGRATED COMMUNITY CARE IN BETTER MANAGEMENT OF NON-COMMUNICABLE DISEASES (NCD)

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**Introduction.** The growing prevalence of non-communicable diseases (NCDs) and demographic changes due to ageing and out-migration of the population represent major challenges for Moldova's health and social systems. These conditions require a coordinated and integrated response adapted to the complexity of needs faced by people living with chronic conditions and vulnerability. The Healthy Life Project, implemented by the Ministry of Health and the Ministry of Labour and Social Protection supported by the Swiss Agency for Development and Cooperation, focuses on improving management of NCDs.

**Aim of the study.** Assessment of the results from the implementation of the Integrated Community Care model in pilot districts and communities in the period of 2019-2026.

**Material and methods.** As part of its approach to addressing NCDs, the project worked with partners to develop an Integrated Community Care (ICC) model, following the social determinants of health and people-centered WHO approaches. The model promotes community-level interventions for prevention, early identification of health and wellbeing risk factors, reciprocal referral and integrated delivery of health and social services for people with chronic conditions and vulnerabilities. The ICC supported development of regulation, sector-specific and inter-sectoral capacity building, improved continuity of care, more efficient allocation of public resources and involvement of private and civil society actors. The assessment used quantitative collection of administrative data on implementation of ICC model done by PHC and social assistance public structures. The qualitative data were collected within the facility-based survey on quality of care to assess the achievements in medical-social collaboration for district and community PHC and social assistance facilities and services using statistical software to measure frequency and percentages.

**Results.** Between 2021 and 2026, the ICC was adopted in 75 pilot communities across all 35 districts and 2 main municipalities. Of these, 56 communities already have reported one year implementation results. A total of 30,316 people with NCD registered at the family doctor screened from a health and wellbeing perspective. Consequently, 71% participated in preventative activities, 69% needed regular health follow-ups and 32% received social benefits. The multidisciplinary teams applied case management for 9% of patients and in 5% provided health and social homecare. Additionally, a facility-based survey on quality of care conducted in 2019 and 2023 revealed improved collaboration between health and social care sectors in support of vulnerable people, particularly through joint home visits and assessments.

**Conclusions.** The ICC experience provides important lessons for integrating health and social care systems to address the growing burden of chronic diseases and population ageing. Further efforts are needed to ensure anchorage into routine systems and budgets for long-term sustainability.

**Keywords:** integrated care, people-centered care, population health and well-being, coordination of interventions, case management, multidisciplinary and intersectorality, patient and community participation.

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## WOMEN'S KNOWLEDGE ABOUT MENOPAUSE AS A DETERMINANT OF NON-COMMUNICABLE DISEASE PREVENTION

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**Introduction.** Menopause is a physiological stage in a woman's life associated with significant endocrine changes and an increased risk of developing non-communicable diseases (NCDs). Due to increasing life expectancy, women spend a substantial part of their lives in the postmenopausal period, which contributes to the growing burden of chronic diseases such as cardiovascular disorders, metabolic conditions, and osteoporosis. Women's knowledge, attitudes and health behaviors during this stage may significantly influence disease prevention and health outcomes. From a public health perspective, improving women's awareness of menopause and related health risks represents an important strategy for reducing the burden of NCDs.

**Aim of the study.** To assess women's knowledge, attitudes and practices regarding menopause and to analyze their role in the prevention of non-communicable diseases.

**Material and methods.** A descriptive cross-sectional study was conducted among 384 women aged 40-60 years (mean age 51.4±3.45 years). Data were collected using a structured questionnaire assessing knowledge about menopause, perceptions regarding this stage of life, the presence of menopausal symptoms and health behaviors adopted for symptom management. Descriptive statistical methods were applied to analyze the relationship between women's knowledge and preventive health behaviors.

**Results.** Most participants lived in urban areas (60.4%, 95% CI: 55.51-65.29). Approximately 74.6% (95% CI: 64.93-84.27) of respondents reported menopausal symptoms; however, only 48.4% (95% CI: 43.41-58.07) sought medical consultation for symptom management. Insufficient knowledge about menopause was associated with lower utilization of health services and limited adoption of preventive health behaviors. Conversely, women with a higher level of knowledge were more likely to seek medical advice and adopt lifestyle modifications aimed at reducing the risk of chronic diseases.

**Conclusions.** Menopause represents an important public health issue due to its association with increased risk of non-communicable diseases. Women's knowledge about menopause influences health behaviors and the management of risk factors related to chronic diseases. Improving awareness and promoting healthy behaviors may contribute to the prevention of NCDs and to better quality of life during the menopausal transition.

**Keywords:** menopause, non-communicable diseases, health risk factors, prevention, women's health, public health.

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## **CASCADE ON-THE-JOB TRAINING: AN INNOVATIVE APPROACH TO INCREASE COMPETENCIES AMONGST PRIMARY CARE PERSONNEL IN USE OF THE WHO PEN PROTOCOLS IN MOLDOVA**

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**Introduction.** Noncommunicable diseases (NCDs) pose a significant global health challenge and are the main cause of premature mortality in Moldova. Primary health care (PHC) centres hold the key to the prevention and management of NCDs. The WHO Package of Essential Noncommunicable (PEN) disease interventions was adapted to the local context and then rolled out at PHC level. The Healthy Life Project supported extensive training of PHC staff in PEN 1 and 2 across 2020-2024. In 2025 a last round of training was provided using a cascade approach targeted to 15 districts where the level of coverage, especially of medical assistants (MAs) of Family Doctors (FD), was below an agreed minimum, acceptable threshold of 30%.

**Aim of the study.** To assess the perceptions of PHC personnel that experienced the new training approach for PEN 1 and 2.

**Material and methods.** The new training was conducted by local trainers (FDs and MAs) in their own districts, at the staff's workplace, in a flexible manner, without affecting clinical activity. The quality of the teaching process was monitored by national trainers through on-line and onsite visits. In the last round, 746 personnel were trained, including 129 family doctors (FDs) and 617 MAs. The perceptions of the staff trained were assessed based on a standardized data collection tool. The evaluation form was completed by 558 participants, of which 442 were MAs and 116 FDs. The forms were filled in digitally through Google Forms (using links and QR codes), and the collected data was processed and analyzed.

**Results.** The findings highlighted a very high level of satisfaction with all the educational dimensions evaluated: 85% of participants mentioned the achievement of the program objectives, 82,6% - the fulfillment of personal expectations, 83,6% - the efficiency of the training. In the analysis of the specific thematic responses, a significant focus on diabetes mellitus is noted. Subthemes such as diabetes treatment and diabetic foot management were frequently associated with the need to strengthen practical skills. Another aspect of interest was effective communication and motivational interviewing, relevant to the doctor-patient relationship. Cardiovascular risk assessment and the promotion of a healthy lifestyle were perceived as fundamental elements of prevention and integrated care.

**Conclusions.** Cascade districts training provided by local trainers contributes to the creation of a district-level network that provides support for the subsequent implementation of PEN. The use of PEN tools was perceived as one of the most useful and applicable components of the training. The practical and interactive nature of the training, the applied activities, teamwork and case studies were extremely useful for consolidating knowledge.

**Keywords:** WHO PEN protocol, PEN training, noncommunicable diseases, primary health care.

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## THE ROLE OF CHILD NUTRITION FOR THE PREVENTION OF NON-COMMUNICABLE DISEASES IN THE REPUBLIC OF MOLDOVA

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**Introduction.** Poor nutrition in the first 1000 days of children's lives can have irreversible consequences, including leading to noncommunicable diseases. Early breastfeeding, exclusive breastfeeding in the first 6 months of life, followed by adequate complementary foods lay the foundation for the child's health and prevents the double burden of malnutrition, which includes child growth failure and overweight. According to the data of the Infant and Young Child Feeding Knowledge and Practices Survey, 2024, and the Multiple Indicators in Nests Study (MICS), 2012, the indicator of early breastfeeding modestly increased from 60.9% (2012) to 72% (2024), and vice versa, the indicator of exclusive breastfeeding in the first 6 months of life marked progress from 36.4% in 2012 to 49% in 2024. Data reveals a decrease for the breastfeed to one year of age indicator from 12.2% (2012) to 5% (2024) when the indicator of bottle feeding slightly increased from 50.2% (2012) to 53% (2024).

**Aim of the study.** To assess child malnutrition and specific micronutrient deficiency in children aged 0-5 years in Moldova in correlation with nutritional status indicators.

**Material and methods.** A descriptive time-series epidemiological analysis (2000-2022) was conducted on the incidence of malnutrition as well as anemia as a specific form of child undernutrition in two age-specific categories (0-1 and 0-5 years). Data was extracted from official annual statistical reports of the National Agency for Public Health.

**Results.** Malnutrition (E43-E45) has had a significant reduction in both child age periods – 0-1 and 0-5 years of life. The malnutrition incidence rate in children aged 0-5 years decreased by 7 times (from 21/1000 in 2000 to 3.0/1000 in 2022), and the malnutrition rate in children aged 0-1 years decreased by 7.5 times (from 81.6/1000 in 2000 to 10.9/1000 in 2022). The incidence of anemia in children (D50-D53), as a specific form of undernutrition, had a slower decrease from 187/1000 (2000) to 140.9/1000 (2019) at age 0-1 years and from 102/1000 (2005) to 66.8/1000 (2019) at age 0-5 years.

**Conclusions.** Correlation of nutritional status indicators in children under one year of age and up to 5 years of age with indicators reflecting their eating practices shows improvement trends, especially regarding malnutrition. At the same time, existing deficiencies in complementary feeding correlate with slower trends regarding the reduction of the incidence of anemia in children. Adjusting the regulatory framework to international recommendations, their efficient application, monitoring the implementation of feeding practices at the system level, prevention activities, and information for parents are imperative to reduce the impact of eating disorders on disease prevention among children.

**Keywords:** child, breastfeeding, nutrition, malnutrition, anemia, noncommunicable disease.

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## PILOT TESTING OF INTERNATIONAL INSTRUMENTS FOR DENTAL FLUOROSIS RISK AWARENESS AND OHRQoL

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**Introduction.** Dental fluorosis is a public health concern in Moldova, especially in endemic areas where drinking-water fluoride may exceed the limit recommended by the World Health Organization. Rural communities rely mainly on groundwater, including artesian sources; therefore, risk of fluorosis onset and progression remains high. OHRQoL assessment can capture functional and psychosocial impact and support prevention in children and adolescents.

**Aim of the study.** To test, align and adapt standardized instruments for self-assessment of OHRQoL and awareness of dental fluorosis risk, using a combined OHRQoL and CS-OIDP questionnaire.

**Material and methods.** A cross-sectional descriptive pilot study included 31 families with children from endemic areas with increased fluoride in artesian water sources. The 49-item tool combined two standardized questionnaires (OHRQoL and CS-OIDP) adapted to the fluorosis context; internal consistency was planned to be evaluated using Cronbach's alpha coefficient.

**Results.** The tool was structured into six sections: general information, OHRQoL, fluorosis impact on daily activities, dental aesthetic self-assessment, self-rated fluorosis severity, and post-intervention assessment; administration was feasible. Among children, 54.9% were boys and 45.1% girls; 87.1% had lived in endemic areas up to age 7 years and 81.7% currently resided there. Dental visits were reported for preventive consultation (22.1%), tooth pain (25.8%), treatment continuation (22.6%), and family physician referral (6.5%); 22.6% attended a dental consultation only for the second time in their lives. Socioeconomic status was reported as unsatisfactory in 16.3%, satisfactory in 32.3%, and good/very good in the remaining families.

**Conclusions.** Pilot adaptation of a standardized assessment instrument for endemic dental fluorosis may support OHRQoL indicator development and awareness assessment; further validation is warranted.

**Keywords:** dental fluorosis, OHRQoL; CS-OIDP, children, endemic areas, artesian water, awareness.

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## TRIGGERING FACTORS OF HYPERTENSIVE EMERGENCIES IN THE URBAN ENVIRONMENT: AN OBSERVATIONAL STUDY IN THE PREHOSPITAL SETTING

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**Introduction.** Hypertensive emergencies represent a major public health problem, being associated with an increased risk of acute cardiovascular complications and mortality. In the context of the rising prevalence of arterial hypertension, identifying the triggering factors of hypertensive crises becomes essential for optimizing preventive interventions and management in the prehospital setting. Behavioral and psychoemotional factors, along with individual predisposition, can significantly influence the occurrence of these acute episodes; however, their relative contribution in the urban population requires systematic evaluation.

**Aim of the study.** Assessment of the triggering factors of hypertensive emergencies in urban patients who sought emergency medical care in the prehospital setting.

**Material and methods.** The study was a selective, descriptive cross-sectional observational study, including a sample of 418 patients with hypertensive emergencies from the urban area, who received care from the Emergency Medical Service in the prehospital setting. The inclusion criteria were: patients with hypertensive emergencies in the prehospital stage; patients aged over 18 years; and informed consent provided by the patient or by first-degree relatives for participation in the study. Descriptive statistics (frequencies, percentages, 95% CI) were used, and group comparisons were performed using the chi-square ( $\chi^2$ ) test;  $p < 0.05$  was considered statistically significant.

**Results.** As a triggering factor for hypertensive crisis, almost all patients reported psychoemotional stress – 414 (99.0%; 95% CI [98.1-99.8]). For approximately two-thirds of the patients, physical inactivity was identified as a triggering factor – 283 (67.7%; 95% CI [63.2-72.2]) cases. Other factors had a considerably smaller contribution to the development of hypertensive episodes. Although women appeared to report hereditary factors more frequently as triggers for hypertensive crises – 48 (20.8%; 95% CI [15.7-26.9]) cases versus 26 (13.9%; 95% CI [9.0-19.0]) in men, as well as excessive salt intake – 36 (15.6%; 95% CI [11.0-20.4]) cases versus 20 (10.7%; 95% CI [6.5-15.4]) in men, no statistically significant differences were found for either of these factors ( $\chi^2 = 3.353$ ;  $df = 1$ ;  $p = 0.067$ ) and ( $\chi^2 = 2.992$ ;  $df = 1$ ;  $p = 0.224$ ), respectively. At the same time, excessive alcohol consumption was reported by only one male patient (0.5%; 95% CI [0.0-1.7]), which does not indicate a statistically significant difference between sexes ( $\chi^2 = 1.238$ ;  $df = 1$ ;  $p = 0.266$ ).

**Conclusions.** The study highlights the dominant role of psychoemotional stress as a triggering factor for hypertensive crises, being reported by almost all patients. Physical inactivity also represents an important factor, present in more than two-thirds of cases. The results emphasize the need for interventions focused on stress reduction and the promotion of an active lifestyle in the prevention of hypertensive emergencies.

**Keywords:** hypertensive emergency, triggering factors, psychoemotional stress, physical inactivity, arterial hypertension, prehospital care.

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## FINANCIAL PRECARITY AND MENTAL HEALTH AMONG STUDENTS: A NATIONWIDE STUDY IN FRANCE, 2025

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**Introduction.** Financial precarity is an emerging challenge for health students, yet little is known about which students are most vulnerable or the factors that contribute to their risk.

**Aim of the study.** To assess prevalence and determinants of financial precarity and examine its associations with mental health, healthcare avoidance, and academic outcomes among French health students.

**Material and methods.** A nationwide cross-sectional study across all the 34 French health universities was conducted in 2025. Data were collected via an online self-administered questionnaire covering socio-demographic characteristics, financial resources, employment, mental health, and healthcare access. Financial precarity was defined as the combination of financial insecurity, frequent overdrafts, and foregoing essential purchases.

**Results.** A total of 12,565 students were included; 56% were medical students, 21% para-medical, 12% midwifery, odontology, pharmacy, or physiotherapy, and 11% first-year health students. Financial precarity varies by academic fields of health, ranging from 4.6% in first-year health students to 12% in paramedical students. Adjusted analyses showed lower odds of precarity among medical (AOR=0.66; 95% CI 0.54-0.80), midwifery, odontology, pharmacy, or physiotherapy (AOR=0.53; 95% CI 0.41-0.69), and first-year health students (AOR=0.53; 95% CI 0.37-0.74) compared with para-medical students. Risk factors included very low parental socioeconomic status (AOR=2.99; 95% CI 2.35-3.81) and student loans (AOR=2.78; 95% CI 2.34-3.31), whereas high family financial support was protective (AOR=0.10; 95% CI 0.08-0.12). Financial precarity was strongly associated with depressive symptoms (AOR 95% CI (4.87 (4.11-5.77))), anxiety (AOR =3.81 95% CI (3.10-4.69)), emotional exhaustion (AOR = 8.48 95%CI (5.97-12.05)), renouncing healthcare (AOR=6.20) and repeating a year AOR 95% CI (1.74 (1.49-2.05)).

**Conclusions.** The strong associations observed between financial precarity and mental health outcomes, including depressive symptoms, anxiety, and especially emotional exhaustion, suggest a cumulative burden that may compromise both well-being and academic development. This study has implications for the healthcare system as a whole. Health students represent the future workforce, and their well-being during training is critical for ensuring a resilient and effective healthcare system. Addressing financial precarity is therefore not only a matter of equity, but also of long-term workforce sustainability and quality of care. Further longitudinal research is needed to clarify causal pathways and to assess the long-term impact of financial precarity on career trajectories and professional outcomes. Additionally, qualitative studies could provide deeper insights into the lived experiences of financially precarious students and help refine targeted interventions.

**Keywords:** socio-economic precarity, students, mental health, health compartments, epidemiology, public health.

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## AMBIENT AIR PARTICULATE TOTAL LUNG DEPOSITED SURFACE AREA LEVELS IN URBAN CHERNIVTSY CITY, UKRAINE

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**Introduction.** In 2018, the World Health Organization recognized air pollution as a risk factor for noncommunicable diseases (NCD). Air pollutants, such as ultrafine particles (UFP), can penetrate deep into the lungs and enter the bloodstream, causing cardiovascular (coronary heart disease), cerebrovascular (stroke) and respiratory diseases. The determination of lung deposited surface area (LDSA) of UFP is of high interest for exposure assessment, as it reflects the concept that particle surface area available in the lung is a relevant exposure metric. LDSA has been proposed as a critical predictor for health outcomes from aerosol exposure, as it appears to be one of the most relevant physical metrics for evaluating exposure to particles.

**Aim of the study.** To analyze the long-term (2013-2020) spatial-temporal characteristics of concentration of total LDSA in Chernivtsi city, Ukraine.

**Material and methods.** UFP measurements were carried out using a Scanning Mobility Particle Sizer (SMPS). The sampling site was an urban background station located in the center of Chernivtsi (Ukraine). The measurement period included a full eight years (2013-2020). The total LDSA values were calculated to the ICRP model. In this model applied to divide the respiratory tract into three main regions, including the head/throat (HA), tracheobronchial (TB), and alveolar (ALV) regions.

**Results.** The annual range of concentration of total LDSA was between 100 and 200  $\mu\text{m}^2/\text{cm}^3$ . There are higher concentrations in Eastern Europe. The diel, weekly, and seasonal variability in total LDSA shows significant differences at different types. The PNC in the Aitken and accumulation modes are mainly associated with the total LDSA concentration. The main proportion of LDSA is attributed to the ALV fractions.

**Conclusion.** Measurements of total LDSA concentrations at different types of locations highlight the importance of considering LDSA as an additional indicator of air quality due to its possible association with health risks and the development of chronic noncommunicable diseases. The evaluation of total LDSA in different regions of the respiratory tract, including HA, TB, and ALV as an exposure metric in time series of epidemiological studies should be further investigated.

**Keywords:** ultrafine particles, total lung deposited surface area, particle number size distribution, noncommunicable diseases.

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**ASSESSMENT OF BEHAVIORAL RISK FACTORS FOR NON-COMMUNICABLE DISEASES IN STUDENT YOUTH: REGIONAL AND COMPARATIVE ASPECTS**  
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**Introduction.** Non-communicable diseases (NCDs) remain the leading cause of disability, with their origins often rooted in lifestyle choices during youth. Among students, allergic respiratory conditions are highly prevalent; without proper management, these may progress to bronchial asthma (BA). Furthermore, the synergy of tobacco smoking and vaping significantly increases the risk of developing Chronic Obstructive Pulmonary Disease (COPD), alongside long-term cardiovascular and oncological threats. Monitoring these factors is essential for the effective primary prevention of NCDs.

**Aim of the study.** To study the prevalence of modifiable risk factors for NCDs among students in Chernivtsi.

**Material and methods.** A comprehensive cross-sectional survey of 144 students in Chernivtsi was conducted using Google Forms. Main group: 99 respondents (mean age  $18.9 \pm 2.1$  years, 84.8% were women). Comparative group: 45 foreign medical students (mean age  $23.0 \pm 2.04$  years, 57.8% male). The methods of descriptive statistics, the Student's *t*-test and the Pearson correlation analysis (*r*) within a 95% confidence interval ( $p < 0.05$ ) were used.

**Results.** Analysis of the Main Group: A significant gap exists between self-reported symptoms and clinical diagnosis of allergy: 57.58% reported symptoms, yet only 12.12% had a confirmed diagnosis. Urban students aged 20+ suspected allergies more frequently (75.0%) than those under 20 (47.83%,  $t = 2.197$ ,  $p < 0.05$ ), but sought medical advice less often (26.67% vs 54.55%). Suspected allergy correlated with seasonality ( $r = 0.46$ ) and respiratory symptoms ( $r = 0.85$ ), while confirmed diagnoses showed the weakest correlation with pollen ( $r = 0.23$ ). The smoking rate was 26.26% (35.7% male, 24.71% female), with a strong correlation to the use of electronic nicotine delivery systems ( $r = 0.89$ ,  $p < 0.001$ ). Notably, 47.1% of urban females aged 20+ were smokers ( $t = 2.515$ ). Coffee consumption was noted in 34.5% of local students (reaching 59.1% among females). Comparative Analysis: Foreign students showed a higher smoking rate (35.0%; 42.31% male, 26.32% female), identified as a major hypertension risk factor. Dominant issues included sleep deprivation (67% sleeping 5-6 hours), high stress (69% scoring 6-10 points), and high caffeine intake (72% daily), nearly double the rate of local students.

**Conclusions.** High rates of undiagnosed allergies and smoking among local students significantly increase the long-term risks of bronchial asthma, COPD, and cardiovascular diseases. The risk profile of foreign students is dominated by a "stress-insomnia-caffeine" triad, predisposing them to early hypertension. Low health literacy regarding the impact of lifestyle on chronic pathology necessitates the urgent implementation of university-based screening and prevention programs.

**Keywords:** non-communicable diseases, risk factors, tobacco smoking, allergic alertness, students, prevention.

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**OCCUPATIONAL MEDICINE AS A TOOL FOR THE PREVENTION OF NON-COMMUNICABLE CHRONIC DISEASES**  
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**Introduction.** Non-communicable chronic diseases account for nearly 90% of deaths in Europe and represent a major public health burden. Since lifestyle and occupational factors significantly influence health status, occupational medicine plays an important role in the prevention and early detection of chronic diseases.

**Aim of the study.** The study aimed to evaluate the role of occupational medicine in the prevention of non-communicable chronic diseases, with emphasis on workplace health promotion and predictive medicine approaches.

**Material and methods.** A descriptive cross-sectional study was conducted using epidemiological and occupational health data from European Union and Hungarian public health reports regarding the prevalence of non-communicable chronic diseases among the economically active population. The study included the assessment of occupational and lifestyle-related risk factors, workplace preventive interventions, screening programs, and workplace health promotion measures, with emphasis on the application of predictive medicine approaches in occupational health practice.

**Results.** The study demonstrated that non-communicable chronic diseases account for nearly 90% of all deaths in Europe, while approximately 23.5% of the economically active population in the European Union is affected by chronic diseases and 19% report long-term health complaints. Hungarian public health data showed that almost 50% of the population suffers from chronic diseases, predominantly hypertension, musculoskeletal disorders, diabetes mellitus, asthma, and malignant neoplasms. The assessment also revealed that lifestyle-related determinants contribute to 55-75% of overall health outcomes, emphasizing the importance of preventive occupational health interventions. Workplace-based preventive measures, including periodic medical examinations, screening programs, vaccination, physical activity promotion, stress-management strategies, and nutritional counseling, were associated with earlier identification of risk factors and reduction of preventable morbidity. Furthermore, the application of predictive medicine approaches, including biomarker analysis, genetic susceptibility assessment, and functional-capacity evaluation, improved the identification of occupational groups at increased risk before clinical manifestation of disease.

**Conclusions.** Occupational medicine represents a strategically important component of modern preventive healthcare, and the integration of predictive medicine tools with workplace health promotion interventions may significantly contribute to reducing the burden of non-communicable chronic diseases and improving population health outcomes.

**Keywords:** occupational medicine, non-communicable diseases, predictive medicine, workplace health promotion, chronic disease prevention, occupational health, public health.

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## 2. Raising awareness....nutritional, environmental (Creșterea gradului de conștientizare... nutrițională, ecologică)

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### **FUTURE FOOD TECHNOLOGIES AND THEIR PERCEPTION IN THE PUBLIC MKRTCHYAN Aida, MARDOYAN Syuzanna, MKRTCHYAN Armen**

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**Introduction.** Global population growth, climate change, and limited natural resources are placing increasing pressure on food systems worldwide. Traditional food production models face sustainability and efficiency challenges. Emerging technologies such as 3D food printing, cultured meat, alternative protein sources, precision fermentation, and artificial intelligence-driven food systems are reshaping the concept of food production and consumption. These innovations aim to improve sustainability, nutritional precision, and food safety while addressing modern public health concerns.

**Aim of the study.** To assess and compare the level of public awareness, perception, and acceptance of future food technologies among participants in Armenia and Germany.

**Material and methods.** A cross-sectional questionnaire-based study was conducted in 2025 among medical and non-medical participants from Yerevan State Medical University (Armenia) and RWTH Aachen University (Germany). Participants were recruited on a voluntary basis. The questionnaire assessed awareness, perceived safety, trust, and acceptance of future food technologies. Descriptive and comparative statistical analyses were performed using standard statistical methods.

**Results.** A clear cross-country difference was observed in risk perception and awareness of future food technologies. In Armenia, nearly half of respondents (46.7%) perceived these technologies as dangerous, indicating a predominantly cautious attitude. In contrast, opinions in Germany were more evenly distributed, with 33.1% considering the technologies dangerous, 36.3% not dangerous, and 30.6% expressing uncertainty. A similar pattern was observed regarding lab-grown meat: awareness and self-reported competence were significantly higher in Germany (89.6%) compared to Armenia (41.1%). These findings demonstrate notable differences in knowledge and perception between the two populations.

**Conclusions.** The study demonstrates significant differences between Armenia and Germany regarding awareness and perceived safety of future food technologies. Higher levels of information and exposure to innovative food production methods appear to positively influence public perception and acceptance. Strengthening educational and informational initiatives may improve public understanding and facilitate acceptance of these technologies.

**Keywords:** future food, 3D food printing, cultured meat, alternative proteins, food safety, public health.

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## ASSESSMENT OF SELECTED VITAMIN AND MINERAL DEFICIENCY RISKS AMONG INDIVIDUALS FOLLOWING A VEGAN DIET IN ARMENIA

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**Introduction.** In many countries awareness of vegan diets remains limited, contributing to unbalanced diets and inadequate nutrient intake. However, a well-planned vegan diet can provide sufficient essential nutrients across all life stages. The growing popularity of vegan diets raises concerns about micronutrient adequacy, dietary quality, and long-term health effects, particularly in populations with limited nutritional education and access to fortified products.

**Aim of the study.** To assess dietary practices and potential risks of selected vitamin and mineral deficiencies among individuals following a vegan diet in Armenia, considering dietary planning, supplement use, consumption of fortified foods, and lifestyle-related factors influencing nutritional status.

**Material and methods.** A cross-sectional study was conducted in 2026 using an online questionnaire distributed through Armenian vegan communities and social media platforms. A total of 109 adults were recruited via convenience sampling. The questionnaire included items on dietary planning habits, frequency of consumption of fortified foods, use of dietary supplements, and self-reported symptoms potentially associated with micronutrient deficiencies. Adults aged  $\geq 18$  years following a vegan diet for at least several months were included in the study, while incomplete responses were excluded from analysis. Data were processed and analyzed using descriptive statistical methods.

**Results.** Among participants, 54% reported regular use of vitamin B12 supplements, while 29% did not use any supplements at all. Vitamin D supplementation limited to winter months was reported by 58% of respondents. Iodized salt was used by 89% of participants, and 43% reported iron supplementation. Fortified foods were consumed regularly by 57%, while 17% did not consume them or were unaware of their nutritional relevance. Only 63% of respondents reported engaging in at least partial dietary planning. Self-reported symptoms included fatigue (25%), dizziness (8%), and numbness or tingling in extremities (22.8%), suggesting micronutrient insufficiencies.

**Conclusions.** The findings suggest potential risks of inadequate micronutrient intake among vegans in Armenia, particularly in the context of insufficient dietary planning and limited or inconsistent supplement use. Reported dietary patterns and self-reported symptoms may indicate vulnerabilities related to vitamin B12, iron, and iodine intake; however, no biochemical assessment was performed, limiting definitive conclusions. The results highlight the need for educational strategies and initiatives, improved dietary planning, and appropriate use of fortified foods and dietary supplements.

**Keywords:** vegan diet, vitamin B12, iodine, micronutrient intake, fortified foods, nutritional supplements.

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## **RISK BEHAVIORS ASSOCIATED WITH TYPE 2 DIABETES IN WOMAN PATIENTS ADMITTED TO A HOSPITAL IN TIMIȘOARA, ROMANIA. CASE STUDY**

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**Introduction.** The prevalence of diabetes mellitus continues to increase in Romania, especially in the western part of the country, where risk behaviors (unbalanced nutrition, coffee, alcohol consumption and smoking) are recorded with a high frequency in the studied population.

**Aim of the study.** To investigate the association of certain risk behaviors with biological parameters recorded in a group of women, patients with type 2 diabetes mellitus were admitted to a hospital in Timisoara, Romania.

**Material and methods.** The study was conducted on a sample of 227 women patients, aged 40-90 years, admitted to a hospital in Timisoara with type 2 diabetes mellitus. The method consisted of an observational case-study, carried out over a 2-years study-period, tracking risk factors and biological parameters using medical files. The association took into account the biological parameters determined in patients with certain risk behaviors. The found values of the biological parameters were compared with normal values.

**Results.** The most common age in women hospitalized with type 2 diabetes was 51-80 years (196 patients). The nutritional status of the hospitalized patients indicated high frequencies of obesity (132 patients). The risk behaviors encountered in the investigated women influenced the biological parameters recorded in these patients, as follows: alcohol consumption and coffee consumption correspond to the highest level of ASAT (u/l: 44.89 & 54.63), ALAT (u/l: 58.09 & 48.4), cholesterol (mg/dl: 237.61 & 226.33), and LDH (mg/dl: 136.5 & 138.2, respectively); coffee consumption also corresponds to the highest level of glycosuria (mg/dl: 1583.33), TGC (mg/dl: 260.12) and creatinine (mg/dl: 12.21); alcohol consumption and smoking corresponded to the highest level of blood glucose (mg/dl: 203.89) and urea (mg/dl: 72.85), proteinuria (mg/dl: 444.82) and ACR (mg/g: 280.62); alcohol, coffee consumption and smoking corresponded to the highest level of blood glucose (mg/l: 332.62 mg/dl) and high values of urea (mg/dl: 52), uric acid (mg/dl: 10.92) and ALAT (mg/dl: 48.83).

**Conclusions.** The majority of women patients with diabetes mellitus type 2 present obesity. Blood glucose is usually increased in women patients who have all the three risk behaviors or smoking and alcohol consumption. Biochemical parameters of liver, kidney, and blood vessel health (cholesterol) increase in the presence of risky behaviors in women with type 2 diabetes.

**Keywords:** risk behaviors, type 2 diabetes, woman patients, obesity, case-study.

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## **METABOLIC IMPACT OF THE KETOGENIC DIET IN MODULATING THE TUMOR MICROENVIRONMENT**

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**Introduction.** Malignant cells predominantly utilize aerobic glycolysis (the Warburg effect), leading to lactate accumulation and an acidic tumor microenvironment (TME) that facilitates immune evasion. The ketogenic diet (KD), characterized by high fat and minimal carbohydrates, induces systemic production of ketone bodies like beta-hydroxybutyrate (BHB). Beyond serving as an energy source, BHB acts as a signaling molecule that may alter the epigenetic landscape of cancer cells. By reducing systemic glucose and insulin-like growth factor-1 (IGF-1), the KD aims to disrupt oncogenic signaling pathways and reprogram the TME metabolic profile.

**Aim of the study.** To evaluate how sustained nutritional ketosis modulates the TME biochemical composition, focusing on lactate levels, pH regulation, and the expression of metabolic transporters.

**Material and methods.** A prospective, randomized clinical study was conducted between January 2024 and January 2025 on 60 patients diagnosed with stage IV glioblastoma. Participants were randomly assigned (1:1) to either a ketogenic group (KD, n=30), maintaining blood ketones between 1.5-3.0 mmol/L, or a control group (standard diet, n=30). Monitoring included continuous glucose monitoring (CGM) and daily ketone measurements. Peritumoral metabolites were analyzed via Liquid Chromatography-Mass Spectrometry (LC-MS/MS). Expression of monocarboxylate transporters (MCT1/MCT4) and CD8+ T-cell infiltration were assessed using immunohistochemistry and flow cytometry. Statistical analysis was performed using ANOVA.

**Results.** Patients in the KD group exhibited a significant 38% reduction in intratumoral lactate concentration ( $p < 0.05$ ) compared to the control group. This metabolic shift correlated with a transition in peritumoral pH from 6.4 (acidic) to 7.1 (physiological). We observed a marked downregulation of the PI3K/Akt/mTOR pathway, consistent with decreased circulating IGF-1 levels. Furthermore, high BHB levels were associated with significantly increased infiltration of CD8+ T-cells in the KD group compared to controls, suggesting that metabolic reprogramming alleviates TME immunosuppression and enhances anti-tumor immune responses.

**Conclusions.** The ketogenic diet acts as a potent metabolic modulator of the TME by reducing glucose availability and increasing BHB concentrations. These changes reduce acidity and suppress key oncogenic signaling pathways. Our findings indicate that the KD can enhance the host's anti-tumor immune response and may serve as a valuable adjuvant strategy to sensitize tumors to conventional therapies. Rather than a standalone treatment, it should be integrated as a targeted metabolic intervention to optimize the therapeutic window in oncology.

**Keywords:** ketogenic diet, tumor microenvironment, Warburg effect, ketosis, beta-hydroxybutyrate, metabolic oncology.

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## **BIOCHEMICAL CORRELATIONS BETWEEN RAPID WEIGHT LOSS AND OXIDATIVE STRESS: A RISK FACTOR IN ONCOGENESIS?**

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**Introduction.** Rapid weight loss (RWL), often achieved through extreme caloric restriction or aggressive surgical interventions, triggers significant metabolic stress. During rapid lipolysis, adipocytes release large quantities of lipophilic persistent organic pollutants (POPs) and fatty acids into the bloodstream. This process is frequently accompanied by a surge in reactive oxygen species (ROS) and a depletion of endogenous antioxidant defenses, such as glutathione. While weight reduction is generally beneficial, the biochemical "shock" of rapid adipose mobilization may create a pro-oxidative state. If unmanaged, chronic oxidative stress can lead to genomic instability and DNA damage, which are recognized precursors to oncogenic transformation.

**Aim of the study.** To investigate the correlation between the rate of weight loss and markers of oxidative DNA damage and lipid peroxidation to identify potential physiological risks.

**Material and methods.** This prospective cohort study included 100 participants (aged 25-55, BMI > 30 kg/m<sup>2</sup>, without prior history of malignancy or chronic inflammatory diseases), recruited from a metabolic health clinic. Subjects were divided into two groups: the RWL group (n=50), who lost >1.5% body weight per week, and a control group (n=50) with gradual weight loss (<0.5% per week). Blood and urine samples were collected bi-weekly for 12 weeks. Oxidative stress was quantified using malondialdehyde (MDA) for lipid peroxidation and 8-hydroxy-2'-deoxyguanosine (8-OHdG) for oxidative DNA damage via standardized ELISA kits and spectrophotometry. Total antioxidant capacity (TAC) and superoxide dismutase (SOD) activity were also measured. Statistical analysis was performed using SPSS v.26.0, employing Pearson correlation and independent t-tests to compare groups.

**Results.** A strong positive correlation ( $r=0.72$ ,  $p<0.01$ ) was found between the velocity of fat mass reduction and urinary 8-OHdG levels. Compared to the control group, the RWL group exhibited a 45% higher increase in MDA levels ( $p<0.001$ ) and a 30% greater reduction in glutathione levels during peak lipolysis. These changes were associated with transient elevations in pro-inflammatory cytokines (IL-6, TNF- $\alpha$ ), which remained stable in the control group.

**Conclusions.** Rapid weight loss poses a significant biochemical risk by inducing oxidative stress and DNA damage if not accompanied by antioxidant support. While a direct causal link to oncogenesis requires further longitudinal study, the observed genomic damage markers suggest RWL may represent a potential long-term risk factor. Weight loss strategies should prioritize gradual adipose mobilization and nutritional support for the glutathione system to minimize potential genomic instability.

**Keywords:** rapid weight loss, oxidative stress, oncogenesis, lipid peroxidation, DNA damage, glutathione.

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## **COMPLEMENTARY FEEDING PRACTICES IN ARMENIA: EVALUATION OF MATERNAL KNOWLEDGE AND COMPLIANCE WITH WHO STANDARDS**

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**Introduction.** The timely and evidence-based introduction of complementary feeding during the first two years of life is essential for optimal growth, neurodevelopment, and long-term health. The World Health Organization (WHO) provides comprehensive guidelines on the timing, dietary diversity, nutritional adequacy, and responsive feeding practices necessary to support healthy development. However, the extent to which maternal knowledge and feeding practices in Armenia align with these WHO recommendations remains insufficiently investigated, highlighting the need for systematic evaluation.

**Aim of the study.** To assess the level of maternal awareness regarding complementary feeding in the Republic of Armenia and to determine the extent to which their knowledge and perceptions are aligned with evidence-based guidelines issued by the World Health Organization (WHO).

**Material and methods.** A cross-sectional survey was conducted among 111 mothers in the Republic of Armenia. Data were collected using a self-administered structured questionnaire developed in accordance with the guidelines of the World Health Organization (WHO). Data analysis was performed using descriptive statistical methods, with results presented as percentages.

**Results.** Approximately 70% of participants incorrectly identified the concept of complementary feeding. Although the recommendation to initiate complementary feeding at 6 months was largely recognized, substantial knowledge gaps were observed regarding continued breastfeeding, prevention of iron deficiency, and the importance of daily dietary diversity. Inconsistent perceptions were identified concerning the use of unhealthy food items, sugar-rich products, and 100% fruit juices. Principles of responsive feeding were comparatively better understood among respondents.

**Conclusions.** Maternal knowledge regarding complementary feeding in Armenia is partially aligned with the recommendations of the World Health Organization (WHO); however, significant gaps persist, particularly concerning dietary quality, the role of micronutrients, and the limitation of unhealthy foods. These findings underscore the need for targeted educational interventions and the development of evidence-based public health strategies aimed at improving early childhood nutrition practices.

**Keywords:** complementary feeding, maternal knowledge, World Health Organization guidelines, dietary diversity, iron deficiency prevention, continued breastfeeding.

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## CAFFEINE CONSUMPTION AMONG MEDICAL STUDENTS IN ARMENIA: WHAT IS THE MOTIVE?

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**Introduction.** Caffeine is the most commonly consumed psychoactive substance in the world. The most common motives for its consumption are cognitive enhancement, reinforcement effects (pleasure, taste, social interaction), relief of negative affect (reduction of tiredness, stress) and weight control or appetite suppression. Medical schools are widely recognized for their complexity and high levels of competition. Given the high levels of consumption and the association between caffeine consumption and cognitive enhancement motives it is important to investigate caffeine-related patterns among medical students in Armenia.

**Aim of the study.** The aim of this study was to investigate caffeine consumption motives among undergraduate medical students and assess associations with caffeine consumption habits, mind-wandering, sleep patterns and academic performance.

**Material and methods.** This cross-sectional study included 102 undergraduate medical students from Heratsi Yerevan State Medical University, who participated in anonymous, voluntary online survey conducted via Google Forms. The survey collected demographics, caffeine consumption habits, Caffeine Motives Questionnaire (CMQ) and Mind-Wandering Questionnaire (MWQ) responses, sleep and academic performance. The CMQ and MWQ questionnaires were translated from English to Armenian by the research team. The translated versions demonstrated good internal consistency (Cronbach's  $\alpha=0.878$  for MWQ and  $0.852$  for CMQ). Associations between continuous variables were examined using Pearson correlation analysis, with statistical significance set at  $p < 0.05$ .

**Results.** The mean age of participants was  $20.98 \pm 1.67$  years; 75.5% were female. The most commonly consumed caffeine sources were coffee (78.4%), tea (72.5%), and chocolate (72.5%), followed by cola beverages (41.2%) and energy drinks (10.8%). Positive correlations were observed between CMQ Cognitive Enhancement factor (Factor 1) and number of cups of coffee consumed per day ( $r=0.4596$ ,  $p<0.001$ ). Factor 1 was also positively correlated with MWQ scores ( $r=0.2650$ ,  $p<0.01$ ). MWQ scores were positively correlated with daily consumed cups of coffee ( $r=0.3845$ ,  $p<0.001$ ), and demonstrated a negative correlation with self-reported Grade Point Average (GPA) ( $r=-0.2709$ ,  $p<0.05$ ).

**Conclusions.** Caffeine consumption is highly prevalent among undergraduate medical students in Armenia. Cognitive enhancement is the primary motive for caffeine intake, as indicated by positive correlations between cognitive enhancement motives, daily coffee consumption amounts, and mind-wandering scores. Higher mind-wandering scores were associated with lower academic performance, suggesting a potential link between caffeine use, cognitive enhancement motives, and academic performance.

**Keywords:** caffeine consumption, caffeine motives questionnaire, medical students, cognitive enhancement, mind-wandering questionnaire, academic performance.

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## STUDYING THE CAUSES AND CONSEQUENCES OF ALCOHOL CONSUMPTION AMONG YOUNG PEOPLE

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**Introduction.** Alcohol consumption remains one of the leading modifiable risk factors contributing to the global burden of disease, particularly among adolescents and young adults. Early initiation of alcohol use is associated with increased risks of substance dependence, risky behaviors, injuries, and long-term non-communicable diseases. In the Republic of Moldova, alcohol consumption levels remain high, raising concerns regarding its impact on youth health and social outcomes.

**Aim of the study.** To assess the prevalence, determinants, and consequences of alcohol consumption among young people and to identify psychosocial factors influencing drinking behaviors.

**Material and methods.** A cross-sectional study was conducted among 174 young respondents using a structured anonymous online questionnaire. The instrument included items on socio-demographic characteristics, age of alcohol initiation, frequency and type of alcohol consumed, contextual factors, perceived motivations, social influences, and self-reported consequences. Data was analyzed using descriptive statistical methods, including frequencies and percentages.

**Results.** A total of 80.5% of respondents reported having consumed alcohol at least once. The most common age of initiation was between 16–18 years (33.1%), although 19.5% reported first use before the age of 13. Alcohol consumption was predominantly occasional (71.1%), mainly during social events. The primary motivations identified were relaxation (56.4%), social influence (49.1%), and group integration (45.5%). Family members were reported as the main source of first alcohol exposure (47.7%). Although 88.3% of participants did not report significant alcohol-related problems, a subset indicated conflicts, health issues, and academic difficulties. Peer influence and social environment were perceived as important contributing factors.

**Conclusions.** Alcohol consumption among young people is strongly influenced by social and family contexts, with early initiation remaining a significant concern. Although most respondents reported occasional use without major consequences, the identified risk patterns highlight the need for evidence-based prevention strategies, early educational interventions, and strengthened public health policies targeting youth.

**Keywords:** alcohol consumption, youth, risk factors, social determinants, prevention, public health, non-communicable diseases.

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## REAL-LIFE NUTRITION OF OFFICE WORKERS IN THE REPUBLIC OF MOLDOVA

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**Introduction.** Office workers represent a professional category highly exposed to the risks of irregular eating habits, sedentary lifestyles, and chronic stress. This cross-sectional descriptive study describes dietary behaviors, physical activity, and health status among this population in the Republic of Moldova.

**Aim of the study.** To evaluate the typical dietary habits of office employees.

**Material and methods.** A cross-sectional descriptive observational study was conducted between October and December 2025, involving a sample of 414 office employees from various state institutions (ministries, schools, administrative and medical institutions) and private companies (IT, finance) and other predominantly sedentary fields. Data were collected via a structured questionnaire regarding diet, lifestyle, and physical activity. Statistical data processing was performed using SPSS software.

**Results.** The investigated sample is predominantly female (85%, n=352), with an average age of 44.17±11.17 years. 64.5% (n=269) have >10 years of office experience, and 74.2% (n=307) work a 5-day week. There is a notable prevalence of overweight/obesity at 63.8% (n=264), with a mean BMI of 27.6 kg/m<sup>2</sup>. Eating habits are irregular: 42.3% (n=175) eat 1–2 times/day; 34.3% (n=142) skip breakfast; 78.3% (n=324) skip lunch; and ~50% (n=206) have meal breaks shorter than 15 minutes. Fruit and vegetable consumption is low, with 69.8% (n=289) consuming <2 servings/day, while 22% (n=91) consume chocolate daily. Psychologically, high occupational stress affects 62.6% (n=259) and influences the diet of over 90% (n=374). Sleep is affected in 65.5% of respondents, with 21.3% (n=88) sleeping <5 hours/night. Chronic diseases were reported by 74.2% (n=307) (average of 1.71/person), including hypertension (25.8%, n=107), digestive issues (24.2%, n=100), and osteoarticular conditions (22.9%, n=95). Physical activity is mostly occasional (72.9%, n=299), such as walking or taking stairs; only 38.9% reach 150 min/week of moderate activity (~30 min/day). Sedentary time exceeds 6 hours/day for 94.6% of the sample. Primary barriers include time, costs, and stress.

**Conclusions.** The evaluation of dietary behavior reveals high irregularity, with an average of 2.38 meals/day; half of the subjects consume only 1–2 meals daily. Lunch is skipped by three-quarters of employees, while half allocate less than 15 minutes for a meal. Furthermore, workplace stress influences the diet of 9 out of 10 respondents. Notably, 1 in 5 patients with obesity (~20%) presents an eating disorder, suggesting a strong correlation between high body mass and psychological dietary pathology.

**Keywords:** non-communicable diseases, nutrition, sedentary lifestyle, office workers, stress.

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**INFORMATION TECHNOLOGIES IN THE ACTIVITY OF NURSES IN PRIMARY HEALTH CARE FOR THE MANAGEMENT OF NON-COMMUNICABLE DISEASES**  
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**Introduction.** Noncommunicable diseases (NCDs) are the leading cause of morbidity and mortality worldwide. Their chronic evolution requires continuous monitoring, prevention strategies, and coordinated care. Information technologies facilitate data management, communication among healthcare professionals, and efficient monitoring of patients with chronic conditions. In primary healthcare, nurses play a central role in preventive interventions, patient education, and long-term management of individuals with NCDs. However, the integration of digital tools into nursing practice in the Republic of Moldova remains a challenge for health professionals and the health system.

**Aim of the study.** To assess the role and utilization of information technologies (IT) in the professional activity of primary healthcare (PHC) nurses and their contribution to the prevention and management of NCDs.

**Material and methods.** A KAP (Knowledge, Attitudes, and Practices) study was conducted using a structured questionnaire to assess PHC nurses' understanding, perceptions, and behaviors regarding information technologies in daily practice for the management of NCDs, with data analyzed descriptively to identify trends and insights.

**Results.** The study included 350 family medicine nurses from PHC facilities from the Republic of Moldova. The findings indicate that IT is frequently (63.71%) used in their daily activities. Digital systems are mainly applied for managing electronic health records, scheduling consultations (61.40%), documenting clinical data, and monitoring patients with chronic diseases (56.80%). The use of IT facilitates faster access to patient information, improves the quality of medical care (46.90%), and supports better coordination within the medical team (54.90%). In addition, digital tools contribute to more effective follow-up (82.7%) of patients with NCDs, supporting the planning of preventive interventions and health education activities.

**Conclusions.** The integration of information technologies into primary healthcare practice represents an important factor in improving the management of noncommunicable diseases. From the nurses' perspective, these digital tools support both the quality of healthcare services and the implementation of preventive interventions and health education activities.

**Keywords:** information technologies, primary healthcare, nurses, noncommunicable diseases, healthcare management.

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## IMPACT OF HYPOCALORIC DIETS ON THE DIETARY DIVERSITY OF THE POPULATION

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**Introduction.** Hypocaloric diets are widely used as non-pharmacological strategies for weight management and prevention of obesity-related diseases. Their popularity has increased considerably among the general population, especially among young adults. Although these diets may contribute to weight reduction, restrictive dietary patterns may negatively influence dietary diversity and increase the risk of nutritional imbalance when followed without professional supervision.

**Aim of the study.** The study aimed to evaluate the impact of hypocaloric diets on dietary diversity in the population and to identify possible health consequences associated with restrictive dietary practices.

**Material and methods.** A cross-sectional epidemiological study was conducted among 276 women aged 18-60 years who had followed at least one hypocaloric diet. Data were collected using a structured questionnaire consisting of 52 questions regarding socio-demographic characteristics, dietary habits, physical activity, knowledge about hypocaloric diets and perceived health effects. The sample size was calculated using the Cochran formula. Data were processed using descriptive statistical indicators such as proportions and mean values.

**Results.** Most respondents were aged 18-24 years (64%), followed by 25-34 years (16%) and 35-44 years (14%). The majority lived in urban areas (74%), while 26% resided in rural areas. The main motivation for following hypocaloric diets was weight loss (72%), whereas 22% reported medical indications and 6% other reasons. The most frequently followed diets were ketogenic (20%), Mediterranean (15%) and vegetarian (13%). Regarding eating patterns, 46% of respondents consumed three meals per day, 33% two meals per day, and 55% reported frequent hunger during the day. These findings suggest possible dietary imbalance associated with restrictive dieting practices. Some participants also experienced fatigue, dizziness and gastrointestinal discomfort.

**Conclusions.** Hypocaloric diets are widely practiced as a strategy for weight management in the population. However, restrictive diets followed without professional guidance may reduce dietary diversity and increase the risk of nutritional imbalance. Promoting nutritional education and evidence-based dietary recommendations is essential to ensure balanced nutrition and prevent potential health risks.

**Keywords:** hypocaloric diets, dietary diversity, weight management, nutritional status, obesity prevention.

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**HEALTHCARE-SEEKING BEHAVIOR AND ATTITUDES TOWARD PREVENTIVE EXAMINATIONS AMONG THE ADULT POPULATION OF ARMENIA**  
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**Introduction.** Sustainable public health development relies on early disease detection, timely intervention, and accessible primary healthcare services. Preventive medical examinations play a central role in reducing the burden of non-communicable and chronic diseases. Non-communicable diseases, including cardiovascular conditions, cancer, and diabetes, account for approximately 93% of total mortality in Armenia. Despite recognizing the importance of prevention, individuals often exhibit reactive healthcare-seeking behavior, primarily seeking care during advanced or symptomatic stages of illness. Understanding the factors influencing preventive service utilization is essential for shaping effective public health strategies.

**Aim of the study.** To assess healthcare-seeking behavior among adults aged 18 years and older in Armenia, evaluate attitudes toward preventive examinations, and identify the main barriers and motivating factors influencing participation in preventive healthcare services.

**Material and methods.** A quantitative cross-sectional study was conducted using an online questionnaire distributed via Google Forms. A total of 229 adults from different regions of Armenia participated. The survey included sociodemographic characteristics, frequency and timing of physician visits, perceived importance of preventive examinations, and factors discouraging or encouraging participation. Data were analyzed using descriptive statistical methods (frequencies and percentages).

**Results.** The majority of respondents were young and middle-aged adults, with a predominance of female participants and individuals holding higher education degrees. Overall, 95.2% of participants positively evaluated the importance of preventive examinations. However, 45.7% reported visiting a physician only when their health condition significantly worsens, indicating predominantly reactive behavior. Annual preventive visits were reported by 38.6% of respondents, while 26.2% seek medical care only in the presence of serious symptoms, and 7.7% never participate in preventive examinations. Within the past three years, 22.2% had not undergone any preventive examination. The most frequently reported barriers were high service costs (40.4%), lack of trust in the healthcare system (28.7%), time constraints (23.5%), and fear of diagnosis. The main motivating factors included free or low-cost services (54.8%), improved trust in healthcare providers (43.9%), and simplified access to appointments.

**Conclusions.** Although awareness of the importance of preventive healthcare is high among the Armenian adult population, actual healthcare-seeking behavior remains largely reactive. Financial, organizational, psychological, and trust-related factors limit participation in preventive services. Strengthening preventive healthcare in Armenia requires reducing out-of-pocket financial burden, improving accessibility, enhancing public trust in the healthcare system, and promoting preventive health literacy to encourage proactive health behavior.

**Keywords:** preventive examinations, health-seeking behavior, primary healthcare, financial barriers, public health.

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## **DETERMINANTS OF CHILD CUSTODY LOSS AMONG MOTHERS EXPERIENCING HOMELESSNESS: A QUALITATIVE STUDY FROM SLOVAKIA**

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**Introduction.** Child custody loss among mothers experiencing homelessness represents a complex social and public health concern. Beyond its legal dimension, it is associated with cumulative psychosocial stress, and long-term vulnerability affecting both mothers and children. Despite its seriousness, factors shaping custody-related outcomes remain insufficiently explored in the European context.

**Aim of the study.** To explore determinants associated with child custody loss among mothers experiencing homelessness or housing instability in Slovakia.

**Material and methods.** A qualitative study was conducted in Bratislava, Slovakia. Semi-structured interviews were carried out with 19 mothers classified under ETHOS categories of homelessness, including women who had experienced custody loss and those at risk. Interviews explored life trajectories, housing instability, institutional interactions, and family relationships. Data were analysed using inductive thematic analysis.

**Results.** The analysis identified interrelated structural, relational, and individual determinants associated with custody loss trajectories. Participants described persistent housing instability, economic precarity, and limited support. Institutional interactions were often perceived as insufficiently supportive. Family conflict, intimate partner violence, and unresolved early-life adversity contributed to ongoing vulnerability. Prolonged stress was associated with emotional distress and reduced coping capacity. Despite these challenges, many women expressed motivation toward recovery, family reunification, and future stability.

**Conclusions.** Child custody loss in the context of homelessness reflects cumulative and interacting vulnerabilities rather than isolated parental deficiencies. Findings underscore the importance of coordinated housing, social, and public health responses aimed at early identification of risk and prevention of family separation. Strengthening responses to these interacting determinants may support more stable caregiving environments and reduce the likelihood of custody loss.

**Keywords:** homelessness, child custody loss, qualitative research, public health, maternal vulnerability.

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## KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING HIGH-ENERGY-DENSITY FOOD CONSUMPTION AMONG ADOLESCENTS

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**Introduction.** Non-communicable diseases (NCDs) are a global public health challenge, with unhealthy diets and high-energy-density (HED) food consumption being key modifiable risk factors. HED foods, rich in fats, sugar, and salt, contribute to obesity and metabolic disorders in adolescents. Understanding the interplay between nutritional knowledge, attitudes, and practices (KAP) is vital for effective prevention and healthier lifestyles in schools.

**Aim of the study.** To assess knowledge, attitudes, and dietary practices regarding high-energy-density food consumption among students in the Republic of Moldova.

**Material and methods.** A cross-sectional observational and descriptive epidemiological study. The study included a sample of 635 adolescents (38% male, 62% female) aged 15 to 19 from high schools in the Republic of Moldova. Data were collected using a structured KAP questionnaire consisting of 36 items across five sections: general characteristics, knowledge, attitudes, practices, and barriers regarding high-energy-density food consumption. The questionnaire was administered online via Google Forms. Statistical analysis was performed using Microsoft Excel, calculating descriptive statistics and Pearson's correlation coefficient ( $r$ ) to evaluate linear associations. Statistical significance was established at  $p < 0.05$ .

**Results.** The findings indicate that 77.64% of students possess a good level of nutritional knowledge, while 18.58% have moderate and 3.78% low levels. Regarding attitudes, a majority of 54.33% showed a neutral stance, with a mean score of  $M=3.44$ , while 42.83% showed positive attitudes and only 2.83% negative. Dietary practices were predominantly moderate (74.00%), with 14.00% exhibiting passive practices and only 12.00% showing active healthy behaviors ( $M=3.01 \pm 0.60$ ). Bivariate analysis confirmed significant positive correlations across all KAP dimensions ( $p < 0.001$ ). Weak associations were found between knowledge and attitudes ( $r=0.18$ ) and knowledge and practices ( $r=0.28$ ). Conversely, a moderate correlation was identified between attitudes and practices ( $r=0.48$ ,  $p < 0.001$ ), explaining 23% of the behavioral variance. These results indicate that attitudes, rather than knowledge, are the primary predictor of adolescent dietary conduct.

**Conclusions.** The study validates the KAP model, showing that all dimensions are significantly correlated ( $p < 0.001$ ). However, while knowledge is fundamental, attitudes emerge as the primary determinant of dietary practices ( $r=0.48$ ). Consequently, public health interventions should shift from basic information dissemination to strategies focused on attitudinal restructuring to effectively prevent adolescent obesity and NCDs.

**Keywords:** adolescents, high-energy-density foods, knowledge, attitudes, and practices, dietary behavior, NCD prevention.

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## **PRACTICES OF RESTRICTING ONLINE MARKETING OF UNHEALTHY FOOD PRODUCTS IN THE EU COUNTRIES**

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**Introduction.** Online marketing (OM) of unhealthy food products high in fat, sugar, and salt (HFSS) is one of the major drivers of obesity worldwide. In the European Region, it is a critical public health concern, as overweight and obesity affect almost 60% of adults and nearly 1 in 3 children. European children are exposed to HFSS ads every 4 to 7 minutes on social media (SM). In the European Union (EU), a country-specific framework of restricting the OM of HFSS exists, which can help people make better choices.

**Aim of the study.** To assess country-specific practices of restricting OM of HFSS in the EU countries and suggest a suitable practice for Moldova.

**Material and methods.** A comparative policy analysis of regulatory frameworks across the EU countries was conducted. Bibliographic sources were selected from official legislative documents and WHO technical reports on regulatory frameworks for HFSS OM across all 27 EU countries. Efficiency was evaluated by correlating industry compliance rates with exposure data to digital tactics and their subsequent impact on immediate consumption behaviors.

**Results.** 40.7% EU countries have adopted one of three practices of restricting OM of HFSS. Statutory bans were adopted in Estonia, Ireland, Portugal, France, and Sweden, and await implementation in Spain. The co-regulatory framework is the main model in Austria and Denmark, and voluntary pledges in Belgium, Germany, and the Netherlands. Findings indicate that voluntary pledges are ineffective for the online environment, with youth-targeted ads HFSS exceeding 80% in countries like Austria. Statutory models using the strict WHO Nutrient Profile Model, which provides objective criteria for identifying foods prohibited from marketing, show more promise, with Portugal's law leading to a significant drop in HFSS ad coverage. A persistent digital gap remains, as most policies only target child-directed content, leaving minors exposed via general audience SM. Modeling suggests that only a total watershed ban could potentially reduce childhood obesity by 4.6%.

**Conclusions.** To protect public health, Moldova should implement a mandatory statutory ban that applies a strict WHO Nutrient Profile Model to all digital media, ensuring a comprehensive watershed restriction rather than relying on ineffective voluntary industry measures.

**Keywords:** marketing, online, unhealthy food.

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## DIET AWARENESS LEVELS IN YEREVAN AND GYUMRI

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**Introduction.** A healthy diet is the foundation of health, well-being, optimal growth, and development. There is extensive evidence that the intake of certain types of nutrients or an overall healthy dietary pattern positively affects health and helps prevent common non-communicable diseases. Non-communicable diseases such as cardiovascular diseases, cancer, chronic respiratory diseases, diabetes, and obesity are among the leading causes of death and disability worldwide. The significant increase in chronic non-communicable diseases is causally linked to global dietary patterns, which are becoming increasingly Westernized. These diets are characterized by high levels of fatty and processed meats, saturated fats, refined grains, salt, and sugar, and by low consumption of fresh fruits and vegetables. Considering the importance of diet as a key determinant of disease risk, the World Health Organization includes strategies to combat unhealthy diets within its global programs for the prevention and control of non-communicable diseases. In recent years, interest in various diets has significantly increased; however, contradictory information about these diets is also widely spreading. Many people begin following diets without consulting a physician or dietitian, which can lead to metabolic disorders, deficiencies of essential nutrients, and other health problems.

**Aim of the study.** To estimate the level of awareness about diets in Yerevan and Gyumri, as well as their attitudes toward diets and the prevalence of their use.

**Material and methods.** Using the questionnaire, research was performed in 2 study groups involving the general population of Yerevan (100 people) and Gyumri (104 people).

**Results.** The results of our research indicated a generally neutral attitude toward diets among the population of Yerevan and Gyumri. The majority of people do not follow a specific dietary regimen, and only 7% of respondents reported that they maintain a balanced diet. Participants were mostly aware of various types of diets, including low-fat diets, protein diets, the Mediterranean diet, the ketodiet, and others. Among the survey participants, 36% had never followed a diet and did not wish to do so. According to 67% of respondents, the primary purpose of diets is to improve health. At the same time, 46% of participants noted that diets could be potentially harmful if followed without medical supervision. Social media was the main source of information about diets for 57% of respondents. Additionally, 77% of participants stated that people follow diets primarily to lose weight.

**Conclusions.** Based on the findings of the research, it is necessary to enhance public knowledge - particularly through medically verified sources - to present the potential risks and contraindications of diets, and to encourage the adoption of diets under medical supervision. To achieve positive outcomes, short webinars and seminars may be organized, and concise, easy-to-understand informational materials can be disseminated. Developing accessible educational resources in simple language, in collaboration with specialists, may further support this goal.

**Keywords:** diet awareness, balanced diet, public health, non-communicable diseases, dietary habits.

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## THE INFLUENCE OF SHORT-FORM VIDEOS AND SCROLLING ON YOUNG ADULTS

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**Introduction.** Technological development has transformed information consumption by shifting emphasis toward immediacy, intensity, and rapid cognitive uptake. Short-form videos on social media exemplify this shift. Most popular social media platforms (e.g., TikTok, Instagram, YouTube) enable virtually endless scrolling and use algorithms that dynamically adapt content to user preferences. These mechanisms sustain repeated micro-engagement and may reinforce dopamine-related reward patterns, potentially contributing to decreased attention and concentration, persistent fatigue, disrupted sleep habits, and reduced tolerance for longer-form content (e.g., movies, cartoons), making it difficult to watch without breaks. This study explores how young adults perceive these effects in everyday life.

**Aim of the study.** This study aims to assess how short-form video use is associated with young adults' (18-30 years) everyday functioning, including daily habits, sleep behavior, and subjective well-being, and to explore how this consumption pattern relates to educational functioning. Using empirical survey data, the study also aims to map specific changes participants attribute to prolonged scrolling, capturing both adverse and potentially beneficial effects.

**Material and Methods.** The research integrated theoretical and empirical approaches. The theoretical component drew on publications by leading scholars and was supported by analysis, synthesis, induction, and deduction. The empirical component consisted of a structured survey of young adults, developed in line with health-survey principles and sociologically accepted questionnaire design. A total of 100 young adults aged 18-30 voluntarily participated.

**Results.** The survey participants were mostly aged 21-25 (73%). Most reported 6-8 hours of sleep (64%), while 34% slept under 6 hours. Social media exposure was substantial, with 47% reporting 6 or more hours daily on social media. Frequent short-form video scrolling was reported by 93%. More than half (55%) indicated difficulty watching longer content without breaks. The most common self-reported change was reduced attention/concentration (61%), followed by persistent fatigue and poorer memory. Participants most often reported using app time limits, turning off the phone during tasks, and sleep regulation to manage these effects.

**Conclusions.** Respondents largely recognized the perceived mental and physical effects of short-form video scrolling. The findings support introducing digital literacy programs in educational institutions and promoting practical self-regulation strategies, including consistent daily time limits, avoiding scrolling before sleep, and curating content feeds.

**Keywords:** scrolling, short-form videos, social media, dopamine, attention, sleep behavior.

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## EVALUATION OF DIETARY HABITS AND NUTRITIONAL KNOWLEDGE REGARDING DAILY NUTRITIONAL REQUIREMENTS AMONG UNIVERSITY STUDENTS IN THE REPUBLIC OF MOLDOVA

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**Introduction.** Dietary habits developed during university years influence long-term health. This stage is characterized by increased autonomy, academic pressure and irregular schedules that may lead to unhealthy eating behaviors. Insufficient nutritional knowledge is an important modifiable risk factor for non-communicable diseases. Data on dietary habits and nutritional literacy among university students in the Republic of Moldova remain limited.

**Aim of the study.** To evaluate dietary habits and nutritional knowledge regarding daily nutritional requirements among university students in the Republic of Moldova and to explore the association between nutritional literacy and self-reported eating behaviors.

**Material and methods.** An observational cross-sectional study was conducted in the Republic of Moldova using a structured self-administered online questionnaire among university students aged  $\geq 18$  years. The questionnaire assessed nutritional knowledge and dietary behaviors. Data were analyzed using descriptive statistics, and inferential analysis was performed using the  $\chi^2$  test and independent t-test, with significance set at  $p < 0.05$  (MedCalc).

**Results.** The study included 361 respondents (271 females and 90 males), predominantly from health-related fields ( $n=300$ ). Most respondents reported consuming two to three meals per day, although irregular patterns, particularly skipping breakfast, were common. Regarding nutritional knowledge, 106 respondents correctly identified the importance of daily breakfast consumption, 100 correctly indicated that there is no safe daily alcohol intake, and 97 identified the recommended frequency of fish consumption. Only 60 respondents correctly identified the proportion of starchy foods in the Eatwell Plate model. High-sugar foods were also correctly recognized (ketchup – 94; ice cream – 106). Despite these findings, unhealthy dietary behaviors persisted, including frequent consumption of ultra-processed foods, indicating a discrepancy between knowledge and practice.

**Conclusions.** The results indicate a gap between nutritional knowledge and dietary behavior among university students in the Republic of Moldova. These findings highlight the need for nutrition education and health promotion in universities to reduce modifiable risk factors for NCDs.

**Keywords:** nutritional knowledge, dietary habits, university students, non-communicable diseases, public health, nutrition education.

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## **ANALYSIS OF CHANGES IN EATING HABITS AMONG UNIVERSITY STUDENTS DURING EXAM PERIODS**

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**Introduction.** Previous studies suggest that psychological stress and academic pressure are associated with significant changes in eating behavior among students. Examination periods are commonly characterized by increased stress, altered daily routines, and limited time for regular meals, which may lead to unhealthy dietary patterns. Considering that examination periods may last up to two months, representing nearly one-sixth of the year, such dietary changes may have important implications for students' health and overall well-being.

**Aim of the study.** To evaluate changes in eating habits during examination periods and assess associated dietary and weight changes.

**Material and methods.** A questionnaire-based cross-sectional study was conducted among participants from Yerevan State Medical University (n=105) and Yerevan State University (n=101). The survey assessed meal frequency, fast-food consumption, sugar intake, perceived dietary changes during exams, and self-reported weight changes after exam periods.

**Results.** The results demonstrated substantial changes in eating behaviors during examination periods. During regular academic days, the majority of respondents (approximately 83%) reported eating 3-4 or more times per day; however, during exam periods, the predominant pattern shifted to eating only two times per day, reported by 57% of participants, while about 11% reported eating only once daily. Overall, 58% of respondents reported that they often or always change their eating schedule during examinations due to stress or lack of time. Fast-food consumption increased noticeably, with the proportion of participants reporting frequent consumption rising from approximately 13% during regular periods to about 40% during examinations. Increased sugar intake was reported by most respondents, with 48% agreeing and 31% partly agreeing that their sugar consumption rises during exam periods. Weight changes were common: only 23% reported no change, while approximately 33% experienced weight gain and 43% reported weight loss after examination periods.

**Conclusions.** Examination periods are associated with significant disruptions in eating habits among students, including reduced meal frequency, increased consumption of fast food and sugar, and notable weight fluctuations. These findings suggest that academic stress may considerably influence nutritional behavior and highlight the need for awareness programs and preventive strategies aimed at promoting healthier eating habits during examination periods.

**Keywords:** eating habits, exam period, students, weight change, dietary behavior, academic stress.

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## TRENDS AND SOCIOECONOMIC INEQUALITIES IN DIABETES PREVALENCE IN TÜRKİYE: A SEX-SPECIFIC ANALYSIS OF NATIONAL HEALTH SURVEYS, 2010-2022

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**Introduction.** Diabetes mellitus is a leading non-communicable disease and a major contributor to preventable morbidity and mortality. Although individual risk factors are well established, less is known about how diabetes prevalence and socioeconomic inequalities have evolved over time in middle-income countries such as Türkiye, particularly from a gender perspective.

**Aim of the study.** This study aimed to examine temporal trends in diabetes prevalence in Türkiye between 2010 and 2022, to assess socioeconomic inequalities, and to evaluate whether these trends and inequalities differ by sex.

**Material and methods.** We analysed pooled data from six waves of the Türkiye Health Survey (2010–2022), including individuals aged  $\geq 18$  years. Diabetes was defined by self-reported physician diagnosis. Age-adjusted prevalence and linear trends were estimated using complex samples general linear models. Analyses were conducted in IBM SPSS Statistics version 31 (Complex Samples module), applying sampling weights and accounting for household-level clustering within the stratified multistage design. Survey year was entered as a continuous variable. Socioeconomic inequalities were assessed using the Slope Index of Inequality (SII) based on weighted RIDIT scores for education, socioeconomic status (SES), and employment. RIDIT  $\times$  year interaction terms tested changes over time. Sex-specific models were performed.

**Results.** Between 2010 and 2022, age-adjusted diabetes prevalence increased from 6.1% to 9.3% in men and from 8.9% to 13.7% in women. The annual increase was steeper among women ( $p$  for sex $\times$ year  $< 0.001$ ), and prevalence was consistently higher in women across all years. The highest levels and fastest increases were observed among adults  $\geq 65$  years, particularly older women, while younger groups showed lower prevalence and slower growth.

Marked socioeconomic inequalities were evident. Prevalence was higher among individuals with lower education and disadvantaged positions, especially women. Education-based inequalities widened significantly ( $\beta = 0.010$ /year;  $p < 0.001$ ), with a faster increase in women ( $\beta = 0.013$ /year) than men ( $\beta = 0.007$ /year). Employment-based inequalities showed the largest absolute gap (SII = 0.082;  $p < 0.001$ ) and increased in both sexes ( $\beta = 0.007$ /year;  $p < 0.001$ ). SES-related inequalities were smaller (SII = 0.013;  $p = 0.002$ ) but showed a modest upward trend ( $\beta = 0.002$ /year;  $p = 0.013$ ).

**Conclusions.** Diabetes prevalence in Türkiye has risen substantially, particularly among women and older adults. The persistence and widening of socioeconomic inequalities—especially by education and employment—highlight the need for prevention strategies that address structural and gendered determinants beyond individual risk factors.

**Keywords:** diabetes, non-communicable diseases, socioeconomic inequalities, gender differences, Türkiye, time trends.

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## TRENDS IN THE USE OF FOOD SUPPLEMENTS IN THE FRAMEWORK OF PRACTICE OF HYPOCALORICAL DIETS

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**Introduction.** One of the major side effects of hypocaloric diets is a decrease in the basal metabolic rate, as well as fatigue and nutrient deficiencies: proteins, lipids, carbohydrates, vitamins, and essential minerals. The most common deficiencies are protein, vitamin C, potassium, and fiber. Thus, many people who practice hypocaloric diets resort to the use of food supplements to reduce nutritional deficiencies and more. Although multiple scientific sources demonstrate the negative impact of the use of hypocaloric diets and food supplements in a self-managed manner.

**Aim of the study.** Evaluation of trends in the use of dietary supplements in the practice of hypocaloric diets.

**Material and methods.** The descriptive cross-sectional study was conducted in the 3rd quarter of 2025 at CUAMP. The sample was formed by the method based on convenience time sampling based on the informed consent of 71 female individuals, with the age range between 20-70, who practice one of the hypocaloric diets and use food supplements. For data collection, medical records and a structured clinical interview were used, based on a questionnaire. Statistical data processing was performed using the Epi Info program.

**Results.** According to the research results, out of 71 participants, 67 (94.4%) were from urban areas and 4 (5.6%) from rural areas. Of the total number of people who practiced low-calorie diets, 44 (61.9%) used food supplements, 27 (38.1%) did not think that they could use supplements. The statistics of the distribution by age showed that the most frequently used supplements were people between 40-49 years old with 18 cases (40.9%), in the age range 50-59 years old with 11 cases (25.0%), in the age group 30-39, there were 9 cases (20.5%), in the group 60-69 years old there were 4 cases (9.1%), at the age of 20-29 years old there were only 2 cases (4.5%). More frequently used are supplements containing vitamin C in 22 cases (50.0%), supplements containing amino acids in 15 cases (34.1%), and 7 (15.9%) cases of other supplements. The main reasons for using food supplements at the same time with low-calorie diets are fatigue in 16 cases (36.4%), suggestions from social networks in 14 cases (31.8%), accelerating the effect of body weight loss in 8 cases (18.2%), nutritional deficiency in 3 cases (6.8%), and other reasons in 3 cases (6.8%).

**Conclusions.** Following the analysis of the results of the questionnaire of people practicing hypocaloric diets, it was determined that 2/3 use food supplements. People aged 40-49 years use food supplements most frequently. Supplements containing vitamin C are more in demand, and the main reason is fatigue during the period of practicing the hypocaloric diet.

**Keywords:** food supplements, hypocaloric diets, nutrients.

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## EXPRESS DIAGNOSIS OF EATING DISORDERS IN PEOPLE WITH OBESITY

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**Introduction.** Obesity has become a global crisis, with over 1 billion people living with obesity in 2022, according to WHO data. In Europe, over 50% of the population is overweight or obese, with the rate in the Republic of Moldova being higher in urban areas (approx. 20%) than in rural areas (approx. 17%). To date, many factors have been identified that can cause obesity, with eating disorders being one of the most important factors.

**Aim of the study.** Evaluation of the SCOFF test as an express diagnostic tool for eating disorders in people with obesity.

**Material and methods.** The descriptive cross-sectional study was conducted in the 4th quarter of 2025 at the University Clinic of Primary Medical Care. The sampling method used was convenience time sampling with informed consent of 155 people, with the age range between 20-70, diagnosed with obesity classes 1, 2, and 3, according to BMI. For the express determination of eating disorders in people with obesity, the SCOFF questionnaire was applied. Statistical data processing was performed using the Epi Info program.

**Results.** According to the results of the scientific research, out of 155 participants, 148 (95.5%) were from urban areas and 7 (4.5%) from rural areas. The gender distribution showed that 18 (11.6%) men and 137 (88.4%) women participated in the study. According to the analysis of the survey results, out of the total number of patients diagnosed with obesity, 29 (18.6%) were identified with eating disorders, considered a potential factor in the pathology of obesity, and the remaining 126 (81.4%) had other potential triggering factors for the given pathology. Among those who tested positive for the SCOFF questionnaire, most people are in the age range of 50-59 years with 61 cases (39.3%); in second place are people aged between 40-49 years with 42 cases (27.1%); and in third place are people aged between 60-69 years with 37 cases (23.9%). At the same time, of those who tested positive for the SCOFF test, patients with class III obesity (WHO-BMI>40) are 17 cases (58.6%), with class II obesity (WHO-BMI>35) are 8 cases (27.6%), with class I obesity (WHO-BMI>30) are 2 cases (6.9%) and those with overweight (WHO-BMI>25) are 2 cases (6.9%).

**Conclusions.** Following the application of the SCOFF questionnaire to patients with obesity and the analysis of the results of the given research, it can be assumed that every fifth patient with obesity may also have an eating disorder. Eating disorders are most frequently identified in patients with obesity class III (WHO-BMI>40). The ages in which people present symptoms of an eating disorder are between 50-59 years. Eating disorders can be seen among the factors determining the occurrence of obesity.

**Keywords:** express diagnostic, eating disorder, SCOFF, obesity.

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## ANALYSIS OF KINDERGARTEN MEAL PLANS

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**Introduction.** Early childhood (ages 3-6 years) represents a critical period of intensive physical growth and neuropsychological development, during which nutrition plays a decisive role in maintaining health. In kindergarten settings, children are expected to receive approximately 70-75% of their daily energy requirements; therefore, the quality of the provided diet is of substantial importance. An imbalanced diet may contribute to the development of obesity, metabolic disorders, and, subsequently, non-communicable diseases.

**Aim of the study.** To assess the nutritional adequacy of meal plans implemented in public and private kindergartens, evaluate the ratio of macro- and micronutrients, and determine their compliance with the physiological requirements of preschool-aged children.

**Material and methods.** Five-day menus (breakfast, lunch, and afternoon snack) from public and private kindergartens were analyzed. The chemical composition and energy values were calculated based on age-appropriate average portion sizes. The adequacy of macro- and micronutrient intake was evaluated according to established dietary norms, and their percentage contribution to total caloric intake was determined.

**Results.** In the public kindergarten, carbohydrates predominated at 62-68% (recommended: 50-55%), fats accounted for 18-22% (recommended: 30-35%), and proteins comprised 12-15% (recommended: 15-20%) of total energy intake. The proportion of animal-derived proteins was 45-50% (optimal:  $\geq 60\%$ ). Rapidly absorbable carbohydrates constituted 50-55% of total carbohydrates. Saturated fatty acids predominated (65-70%), while polyunsaturated fatty acids were limited (5-10%). A pronounced deficiency of vitamins A and D was identified. In the private kindergarten, the diet was comparatively more balanced: carbohydrates accounted for 56-60%, fats for 25-28%, and proteins for 15-17% of total energy intake. The proportion of animal-derived proteins was 60-65%. Complex (protected) carbohydrates constituted 60-65%, and polyunsaturated fatty acids accounted for 15-20%. Overall vitamin sufficiency was adequate; however, a risk of vitamin D deficiency persisted.

**Conclusions.** The meal plans in both kindergartens did not fully comply with age-specific physiological standards. More pronounced macronutrient imbalance and vitamin deficiencies were observed in the public kindergarten, whereas the private institution demonstrated values closer to optimal levels but still required improvement in fat quality and vitamin D sufficiency. It is recommended to increase the proportion of high-quality animal proteins and polyunsaturated fatty acids, limit rapidly absorbable carbohydrates, and ensure periodic scientific monitoring of meal plans.

**Keywords:** kindergarten, diet, macronutrients, vitamin sufficiency, early childhood.

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## PREVALENCE AND DETERMINANTS OF SELF-REPORTED ANEMIA AND IRON SUPPLEMENTATION AMONG ADULTS IN THE REPUBLIC OF MOLDOVA

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**Introduction.** Anemia is a prevalent public health concern with multifactorial etiology, including chronic inflammation and nutritional factors. Although iron supplementation is widely used, its effectiveness may be limited in anemia of inflammation, where chronic disease impairs iron utilization. Lifestyle behaviors influence chronic disease risk and may affect anemia prevalence.

**Aim of the study.** To assess the prevalence of self-reported anemia and iron supplementation and to identify key demographics and determinants, with particular focus on anemia of inflammation and supplementation practices.

**Material and methods.** A cross-sectional survey was conducted among 411 adults (mean age 32.5±15.2 years; 52.8% female; mean BMI 25.01±4.8 kg/m<sup>2</sup>). Participants reported anemia status, type of anemia, chronic diseases, inflammatory conditions, supplementation practices, and lifestyle factors. Bivariate associations were examined using chi-square and t-tests, while Kruskal-Wallis tests evaluated differences in age and BMI across anemia subtypes. Multivariate logistic regression estimated odds ratios (OR) with 95% confidence intervals (CI) for predictors of self-reported anemia.

**Results.** Self-reported anemia prevalence was 23.9%, with 54.1% reporting iron supplementation. Female sex was strongly associated with anemia (OR 5.16; 95% CI 1.99-14.55), whereas male sex was protective (OR 0.19; 95% CI 0.07-0.50). Age varied significantly across anemia subtypes ( $p < 0.0001$ ). Chronic disease increased the odds of anemia (OR 2.37; 95% CI 1.03-5.58), as did autoimmune/inflammatory conditions (OR 2.78; 95% CI 1.50-5.05). Anemia of inflammation was significantly associated with chronic disease ( $p = 0.008$ ). Dietary factors, physical activity, short sleep duration, and stress were not independently associated with anemia, likely influencing the risk via chronic disease pathways. Iron supplementation was strongly associated with self-reported anemia (OR 19.11; 95% CI 6.84-65.84), likely reflecting reverse causality or unsupervised use.

**Conclusions.** Nearly one-quarter of adults reported anemia, predominantly among females and individuals with chronic disease, highlighting a substantial burden of anemia of inflammation. Age and BMI differed across anemia subtypes, indicating heterogeneity in clinical profiles. The widespread use of iron supplements underscores the need for comprehensive evaluation of anemia etiology beyond nutritional deficiency. Lifestyle interventions remain critical for chronic disease prevention and may reduce anemia risk.

**Keywords:** anemia of inflammation, iron, supplementation, chronic disease, lifestyle, public health.

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## **ROLE OF THE NUTRITIONAL COMPONENT IN THE TREATMENT OF PATIENTS WITH PULMONARY TUBERCULOSIS HOSPITALIZED AT THE INSTITUTE OF PNEUMOLOGY „CHIRIL DRAGANIUC”**

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**Introduction.** Pulmonary tuberculosis remains one of the most important public health problems worldwide, remaining among the leading causes of morbidity and mortality from infectious diseases. Clinical data show that approximately 40-60 % of patients with pulmonary tuberculosis are malnourished at the time of diagnosis. In clinical practice, nutrition and nutritional support are increasingly recognized as essential elements in the care of patients with tuberculosis.

**Aim of the study.** To analyze the role of the nutritional component in the treatment of patients with pulmonary tuberculosis hospitalized at the „Chiril Draganiuc” Institute of Pneumology.

**Material and methods.** The research was conducted as an observational, descriptive and prospective study, with a monocentric character, carried out on a group of 60 patients with pulmonary tuberculosis hospitalized in the IMSP Institute of Pneumology „Chiril Draganiuc” in Chisinau. The study period is September - December 2025 (3 months), corresponding to the intensive phase of anti-tuberculosis treatment. Longitudinal monitoring of patients during the period allowed the assessment of the dynamics of anthropometric, biochemical and bacteriological indicators, as well as the assessment of early clinical evolution.

**Results.** Patients with pulmonary tuberculosis present with significant nutritional imbalances upon admission, with approximately 30.0% being underweight. The mean weight increased from 63.9±16.1 kg at admission to 67.0±16.2 kg at discharge, with a mean difference of +3.1±1,4 kg. The mean duration of the hospitalization was 105.7 days. The observed trends suggest a potential favorable role of protein intake on weight recovery, but the immediate clinical evolution seems to be predominantly determined by the antituberculosis treatment and the institutional diet.

**Conclusions.** The study integrated comprehensive nutritional assessment, dietary pattern analysis, and clinical outcome monitoring in a cohort of patients with pulmonary tuberculosis from the Republic of Moldova, providing relevant local data on the magnitude of malnourished on the role of the nutritional and socio-economic factors in disease progression. The results support the need to systematically include nutritional and social intervention in the management of pulmonary tuberculosis.

**Keywords:** pulmonary tuberculosis, nutrition, malnourished, clinical outcome, nutritional support.

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## DOPING PHENOMENON – A CURRENT CHALLENGE FOR FUTURE DOCTORS

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**Introduction.** Education by promoting a healthy lifestyle and fair play represents a key aspect in preventing doping phenomenon in sports. The abusive use of medicinal substances, especially the prohibited ones, and food supplements has harmful effects on the health, represents the violation of antidoping rules and leads to the penalty and disqualification of the athlete. Health professionals due to their daily interaction with athletes play an important role in the sport system and become the first line personnel in anti-doping education. The future doctors require proper practical skills and deep knowledge of anti-doping law base, the safety of use of medicines in sports and legal consequences of violation of anti-doping regulations.

**Aim of the study.** The assessment of attitudes regarding the doping phenomenon among undergraduate students of *Nicolae Testemitanu* State University of Medicine and Pharmacy.

**Material and methods.** In accordance with the objectives of Moldavian-Turkish project CAROLINE stage 2, a descriptive cross-sectional study aiming to assess the knowledge and attitudes regarding the doping phenomenon among international undergraduate students was performed by completing voluntarily an anonymous self-administered questionnaire consisted of 26 questions in Google Forms. The statistical analysis was performed using SPSS 23.0 software, and results were expressed as mean  $\pm$  standard deviation (SD) and number (%).

**Results.** Sixty undergraduate students of Medicine 2 Faculty (35 males and 25 females) with mean age 26.5 years old participated in the survey. The survey revealed that half of respondents (50%) do not consider doping a problem and know nothing about World Antidoping Agency (WADA), World Antidoping Code and its International Standards, including WADA List of Prohibited Substances. Of all study participants, 30.4% did not study at the University about substances prohibited in sports and know nothing about the risks and side effects of misuse of doping substances. At the same time, 51.8% of students reported occasional use of anabolic steroids to enhance endurance and physical performance, while 26.8% of students mention the lack of information regarding doping prevention measures. The study data indicate that an inappropriate level of knowledge on anti-doping issues causes the ambivalent perception of doping among undergraduate students.

**Conclusions.** The doping phenomenon is a current problem of both the sport system and public health. Since future doctors lack the appropriate level of anti-doping knowledge, it is highly essential to develop university and post-graduate training programs on the anti-doping issue which will contribute to prevent and eradicate the phenomenon of doping in sport and will reduce the risk of harmful consequences on athletes' health.

**Keywords:** education, training program, knowledge, antidoping, sport.

The study was carried out with the financial support of the Moldovan-Turkish bilateral project „Common Actions in Anti-Doping Research through Piloting of Innovative Interventions in Education (CAROLINE stage 2)” number: 23.80013.0808.4TR, financed by NARD.

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## THE CURRENT CHALLENGES OF THE SPORTS SYSTEM AS PUBLIC HEALTH RISK FACTORS

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**Introduction.** Sport represents a social-economic phenomenon in continuous development, with an important contribution to the strategic objectives of the public health system. Nowadays, practicing sports is the basic factor in maintaining health and harmonious development of personality, in creating and transmitting new knowledge and general human values, in developing human capital and forming awareness of national identity. The social and educational values of sports play a primary role in creating the conditions for sustainable human development and promoting a healthy lifestyle.

**Aim of the study.** To assess the current challenges of the sports system as public health risk factors.

**Material and methods.** In accordance with the objectives of Moldavian-Turkish project CAROLINE stage 2, the data collected from the official reports (2020-2023) of National Anti-doping Agency, Ministry of Health, Ministry of Education and Research and National Statistical Office of Republic of Moldova were analyzed by using descriptive statistics methods (SPSS 23.0 software). The results were expressed as mean  $\pm$  standard deviation (SD) and number (%).

**Results.** In the Republic of Moldova there are 23 state public institutions where 8.5 thousand athletes are employed. About 38.9 thousand children attend 101 sports schools and high schools that operate under central or local public authorities. The study data indicate that only 1 in 6 teenagers practice regular physical activity, 17% practice physical activity of at least 60 minutes/day, while almost 50% of teenagers do not practice sports consistently. At the same time 31.8% of adults have three or more risk factors related to lifestyle and 9.1% of adults do not meet the WHO recommendations regarding physical activity for health. According to the National Statistical Office only 58 stadiums with more than 500 seats, 1211 sports halls, 25 pools (25 m length) and 1 pool (50 m length) are functional and meet current requirements for practicing sports. At the current stage the insufficient infrastructure, limited funding, general deficit of highly qualified teaching staff and managers, exodus of athletes, lack of antidoping knowledge and education are main challenges regarding the proper development of the sports system.

**Conclusions.** The current economic situation has a negative impact on the development of the sport system and on the health of the population. Adequate and properly managed funding will ensure access to sports infrastructure, educational programs and highly qualified coaches, which will improve the sports performance and quality of life of the population by reducing the risk for nontransmissible diseases. The national strategic vision must be focused on strengthening the development of sports for all at all levels and for all age categories.

**Keywords:** sport, challenges, public health, healthy lifestyle, risk factors.

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## NUTRITIONAL BALANCE AND SUPPLEMENT USE AMONG TRAINEES

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**Introduction.** Nutritional balance is an important component of physical performance and injury prevention among recreational trainees. Protein and creatine supplements are widely used to enhance muscle strength and recovery. However, their association with balance and postural stability remains unclear.

**Aim of the study.** To evaluate the relationship between protein and creatine supplementation and self-reported balance maintenance among trainees.

**Material and methods.** This cross-sectional survey study included over 110 trainees of different age groups. Participants were recruited on a voluntary basis. Data were collected using a structured questionnaire designed to assess dietary habits, use of protein and creatine supplements, frequency and quantity of intake, and perceived side effects. The questionnaire included both closed- and open-ended questions. Data were analyzed using descriptive statistical methods.

**Results.** A significant portion of trainees (more than 67%) reported meeting their nutritional needs through regular food intake, whereas only 21% used dietary supplements. Among supplement users, the most common choice was a combination of protein and creatine, typically consumed several times per week. After one month of supplementation, some participants reported subjective improvements in perceived strength, endurance, and balance stability. However, a subset of trainees experienced adverse effects, including muscle pain, bloating, and occasional nausea. Additionally, a notable proportion of participants indicated that they followed no structured dietary plan and relied solely on training without nutritional regulation. These findings demonstrate variability in dietary behaviors and supplementation patterns among recreational trainees.

**Conclusions.** The findings of this survey study indicate that most trainees rely on conventional dietary intake rather than supplementation to maintain nutritional balance. Although protein and creatine supplementation were associated with self-reported positive changes in some individuals, adverse effects were also observed in a minority of participants. The variability in dietary habits and supplement use suggests a lack of standardized nutritional guidance among trainees. These results highlight the importance of evidence-based nutritional education and individualized dietary planning to promote safe and effective balance maintenance and overall physical performance.

**Keywords:** trainees, nutritional balance, protein, creatine, supplementation, survey study.

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## IMPACT OF OBESITY ON MORBIDITY AND MORTALITY DUE TO CEREBROVASCULAR DISEASES

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**Introduction.** Obesity is one of the most important public health problems worldwide and is associated with an increased risk of cardiovascular and cerebrovascular diseases. In the context of the epidemiological transition, assessing the relationship between excess body weight and the burden of cerebrovascular diseases is essential for substantiating preventive interventions.

**Aim of the study.** To evaluate the associations between obesity incidence and morbidity and mortality from cerebrovascular diseases, including stroke, over time.

**Material and methods.** A retrospective descriptive study was conducted based on the analysis of official statistical data provided by the National Agency for Public Health over an 11-year period. Trends in incidence, prevalence, and mortality due to obesity, cerebrovascular diseases, and stroke were examined. Data processing included time-series analysis, estimation of the average annual rate of change, and assessment of correlations using the Pearson correlation coefficient, with calculation of 95% confidence intervals.

**Results.** During the analyzed period, obesity incidence showed an upward trend, with an average annual increase of 0.90 cases per 10,000 population ( $R^2=0.41$ ), while prevalence increased markedly by 22.7 cases per 10,000 population ( $R^2=0.96$ ), suggesting continuous case accumulation. The incidence of cerebrovascular diseases showed a modest increase of 0.27 cases ( $R^2=0.03$ ), whereas prevalence increased by 25.3 cases ( $R^2=0.90$ ). Stroke incidence demonstrated an average annual increase of 0.31 cases ( $R^2=0.30$ ). In contrast, mortality from cerebrovascular diseases showed a slight downward trend (-0.13 cases per 100,000 population;  $R^2=0.002$ ), and stroke mortality decreased by -2.97 cases ( $R=0.35$ ), possibly reflecting improvements in medical management. Correlation analysis revealed a significant positive association between obesity incidence and cerebrovascular disease incidence ( $r=0.69$ ;  $P=0.018$ ; 95% CI: 0.16-0.91), as well as a very strong correlation with stroke incidence ( $r=0.92$ ;  $P=0.0001$ ; 95% CI: 0.71-0.98), supporting the role of obesity as a major risk factor. The correlation between obesity and stroke mortality was weak and statistically non-significant ( $r=0.31$ ;  $P=0.35$ ; 95% CI: -0.36-0.77), while the inverse relationship observed in some analyses ( $r=-0.55$ ;  $P=0.08$ ) suggests the influence of other factors, such as access to treatment and quality of care.

**Conclusions.** Obesity is significantly associated with increased morbidity from cerebrovascular diseases and stroke, confirming its role as a major epidemiological determinant. The downward trend in mortality, despite increasing morbidity, indicates progress in clinical management but underscores the need to strengthen primary obesity prevention strategies to reduce the future burden of cerebrovascular pathology.

**Keywords:** obesity, cerebrovascular diseases, stroke, correlation, morbidity, mortality.

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## CONSUMPTION OF FAST FOOD AND ENERGY DRINKS AMONG YOUNG PEOPLE

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**Introduction.** The consumption of fast food and energy drinks has become a major lifestyle trend, especially among young people. Producers of these foods have managed to attract consumers through various marketing strategies.

**Aim of the study.** Assess the real consumption of fast food and energy drinks by young people with the identification of their level of knowledge and eating behavior.

**Material and methods.** A descriptive, cross-sectional study was conducted. It was used a questionnaire with 27 open and closed questions, structured in 4 compartments, which was distributed to a sample of 120 students, residents, and master's students from three Universities and one College. The methods used were: social, hygienic, and statistical.

**Results.** Of the total number of respondents, women made up 75% and men – 25%. Most respondents were aged 24-26 years (58%). According to the BMI results, normal-weight people made up 66%, overweight – 24%, underweight – 6%, and grade I of obesity – 4%. Fast food was consumed by all respondents, but not daily. Thus, 3-5 times a week they were consumed by 4%, 1-2 times a week - by 13%, and the rest consumed them less often. Pizza was most preferred (18%), followed by shawarma (15%), burger (13%). Among the destinations, those from the Andy's Pizza network were most preferred (40%), followed by McDonald's, Star Kebab, and KFC. The choice of fast food was caused by various reasons: organoleptic properties (37%), lack of time for other foods (17%), their accessibility (23%). All respondents confirmed that they are aware of the impact of frequent consumption of fast food on health. About 30% of respondents believed that some digestive disorders were probably caused by fast food consumption, and most overweight people suspected a connection with fast food consumption. Only 9% of respondents stated that nutritional information is decisive in choosing fast food, and 47% took it into account occasionally. If we assume the total number of energy drink consumers is 100%, then they were consumed weekly by 19% of young people, including 2% - 3-5 times, and the rest 1-2 times a week. Most consumers of energy drinks were men, the most preferred drink being Red Bull (68%). The drinks were consumed, in particular, to increase energy and concentration in situations when an effort was required (28%), during a break between activities (13%), or for entertainment outside the home (11%). Most respondents (77%) were aware of the negative impact of excessive energy drink consumption, citing the presence of sugar (29%), caffeine (27%), and other substances in them. Some consumers reported increased heart rate (12%), sleep disorders (11%), nervousness, and agitation (8%). The consumption of energy drinks was combined with alcohol drinks by 9% of respondents.

**Conclusions.** Although to different extents, all respondents consumed fast food, while energy drinks were consumed by 55% of them. The results suggest the need for better information on the impact of fast food and energy drinks on health.

**Keywords:** fast food, energy drinks, eating habits of young people.

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## ROLE OF THE FAMILY IN THE FORMATION OF EATING HABITS IN ADOLESCENTS

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**Introduction.** Adolescence, as a developmental stage, is a critical period; this age group represents 16% of the global population, with approximately 1.3 billion adolescents worldwide. In terms of growth intensity, the rate of significant physical, cognitive, and emotional development during adolescence is second only to infancy. Adolescent behaviors in general, including eating behaviors, are influenced by multiple factors, one of which is undoubtedly the family as a principal determinant. In this context, it is therefore important to investigate the correlation between the family and adolescents' eating habits.

**Aim of the study.** The aim of the study is to analyze the role of the family in the formation of eating habits in adolescents.

**Material and methods.** The study is descriptive and cross-sectional, using the sociological survey as the main data collection method. The research is based on quantitative analysis (through questionnaires) and comparative analysis (parents vs. adolescents) along with a synthesis of the specialized literature from international databases (WHO, PubMed, The Lancet, UNICEF, and Google Scholar). The study group and sampling were non-probabilistic and voluntary, with targeted sampling. Inclusion criteria were volunteer adolescents aged 10-17 years, residents of rural and urban areas, and their parents. The sample comprised 145 adolescents and 73 parents. The instruments for data collection were two structured questionnaires, adapted for each participant category.

**Results.** The age distribution of participating parents is skewed, with a mean age of 39 years ( $M=39$ ), a median of 48.5 years ( $Me=48.5$ ), and a mode of 38 years ( $Mo=38$ ). Analysis of the educational structure of the sample shows a major prevalence of parents with higher education, these representing 71.23% of total participants. The remainder of the distribution is fragmented between lower secondary education (15.07%), vocational secondary education (6.85%), and high school or professional education, which together account for less than 7%. Analysis of the frequency of dialogue about nutrition reveals a perceptual discrepancy between generations, parents reporting much higher active involvement, with over 42% stating that such discussions occur "most of the time" compared with only 24% of adolescents who confirm this frequency. This asymmetry, accentuated by the fact that approximately 7% of youths declare that these discussions "never" take place, suggests a communication barrier in the family environment that may limit the effective transmission of healthy eating habits. Evaluation of eating behavior associated with digital devices reveals a high prevalence of media distractions during meals, with approximately 29.7% of adolescents reporting this habit with the frequency "sometimes" while over 40% practice it regularly ("most of the time" or "always").

**Conclusions.** The results obtained in the research confirm the importance of the family environment in the formation and consolidation of adolescents' eating habits, supporting the hypothesis that the family represents the main agent of nutritional socialization.

**Keywords:** eating behavior, adolescents, family environment, and parental perception.

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## HEALTH PROMOTION AND RESPONSIBLE ANTIBIOTIC USE: POPULATION EVIDENCE FROM MOLDOVA

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**Introduction.** Antimicrobial resistance (AMR) is driven not only by prescribing patterns and health-system factors, but also by what people know, believe and do in everyday life. In this context, health promotion plays a central role in improving antibiotic use, discouraging self-medication and strengthening understanding of the links between human, animal and environmental health.

**Aim of the study.** To assess knowledge, attitudes and practices related to antimicrobial resistance and antibiotic use in the general population of the Republic of Moldova, with emphasis on the implications for health promotion and individual responsibility.

**Material and methods.** A questionnaire-based assessment of the general population was conducted among 2013 respondents using structured items on knowledge, attitudes and practices regarding antibiotic use and AMR. Descriptive analysis was used to summarize the proportion of desirable responses across the three domains and to identify the main gaps relevant for communication, prevention and behaviour-change strategies.

**Results.** The findings showed a low overall level of knowledge (30.9%) and correct practices (31.3%), while attitudes were moderately favorable (48.1%). Important misconceptions persisted: only 10.1% correctly recognized that antimicrobials are not effective against viruses, 24.5% knew that antibiotic therapy should not be stopped early when symptoms improve, and only 20.3% were aware of campaigns promoting prudent antimicrobial use. Awareness of environmental and One Health dimensions was also limited, including surface waters as a potential reservoir of resistant microorganisms (17.2%) and the role of wastewater in AMR dissemination (23.7%). At the same time, some positive attitudes were observed: 60.5% supported the prescription requirement for antibiotics, 55.3% trusted physicians' decisions on antibiotic prescribing, and 70.6% recognized hand hygiene as a measure that reduces infection spread.

**Conclusions.** The study highlights a substantial gap between public perceptions and responsible antibiotic-related behaviour. The results support the need for targeted health promotion interventions that go beyond information delivery alone and actively strengthen individual responsibility, risk perception and practical decision-making. In the Republic of Moldova, AMR communication should place stronger emphasis on viral versus bacterial infections, adherence to prescribed treatment, the risks of self-medication and the broader One Health context. Strengthening these dimensions is essential for preventing avoidable antibiotic misuse and reducing the long-term public health burden of AMR.

**Keywords:** antimicrobial resistance, antibiotic use, health promotion, individual responsibility, public health literacy, One Health.

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## COMPARATIVE ANALYSIS OF QUALITY OF LIFE IN ADULTS WITH EPILEPSY AND FAMILY MEMBERS' PERCEPTIONS: A PILOT STUDY

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**Introducere.** Epilepsy is a chronic neurological disorder with complex clinical and psychosocial implications that extend beyond seizure control. Cognitive impairment, adverse effects of treatment, the unpredictable nature of seizures, limitations in daily activities and social stigma may substantially reduce the quality of life of adults with epilepsy. At the same time, the burden of the disease frequently extends to family members, whose emotional, social and economic resources may also be affected.

**Aim of the study.** To assess quality of life in adults with epilepsy by applying a standardized questionnaire and to compare the results with family members' perceptions.

**Material and methods.** A cross-sectional, descriptive, dual study was conducted among adults with epilepsy and their family members, with a focus on quality of life and stigma assessment. Data were collected using a structured instrument comprising three sections, administered with full respect for anonymity and confidentiality. The instrument was piloted on a sample of 57 participants and was administered in parallel with a national questionnaire consisting of 22 structured items.

**Results.** The comparative analysis revealed differences across all evaluated domains. For overall quality of life, the scores in the two groups were 4.7 versus 7.7; for emotional well-being, 3.4 versus 4.5; and for the energy-fatigue dimension and affective states during the previous 4 weeks, 3.7 versus 6.4. Differences were also identified with regard to seizure-related concerns, effects of antiepileptic treatment, and social functioning with activity limitations, with scores of 7.7 versus 3.4, 8.1 versus 3.1 and 7.3 versus 4.7, respectively. The findings suggest a relevant discrepancy between the experience reported by adults with epilepsy and family members' perceptions of the disease burden.

**Conclusions.** The adaptation and validation of a standardized assessment instrument, applied in parallel with national tools, may contribute to the development of indicators related to health-related quality of life in adults with epilepsy and their families. The findings support the need for an integrated biopsychosocial approach to epilepsy management, centered on both the patient and the family.

**Keywords:** quality of life; QOLIE-31; adult with epilepsy; family; social stigma.

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## ASSESSMENT OF OBESITY AS A DETERMINANT OF ARTERIAL HYPERTENSION IN THE CONTEXT OF NONCOMMUNICABLE DISEASE PREVENTION

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**Introduction.** Arterial hypertension (AH) is a major global risk factor for cardiovascular diseases and a key contributor to the burden of noncommunicable diseases. Its rising prevalence is closely associated with increasing rates of overweight and obesity, recognized as important modifiable determinants of cardiovascular risk. Excess body weight, especially abdominal obesity, contributes to metabolic disturbances, chronic low-grade inflammation, and hemodynamic changes that promote elevated blood pressure. Therefore, assessing nutritional status and dietary habits in hypertensive patients is essential for developing effective prevention and control strategies.

**Aim of the study.** To analyze nutritional status in patients with arterial hypertension, considering obesity as a major determinant of cardiovascular risk and prevention.

**Material and methods.** A prospective, cross-sectional observational study was conducted on 108 adults with confirmed arterial hypertension. Data were collected using a validated questionnaire on sociodemographic characteristics, dietary habits, and lifestyle. Anthropometric assessment included BMI and waist-to-hip ratio (WHR), according to WHO criteria. Clinical data were extracted from medical records. Statistical analysis included descriptive methods and inferential tests ( $\chi^2$  test, Student's t-test, and correlation analysis), with  $p < 0.05$  considered significant.

**Results.** The sample included 41.7% men and 58.3% women, mean age  $65.0 \pm 10.11$  years. Mean blood pressure was  $169.6 \pm 1.0 / 98.3 \pm 3.4$  mmHg; left ventricular hypertrophy was present in 70% of patients. Obesity was identified in 63.9% and overweight in 32.4%; mean WHR ( $0.91 \pm 0.10$ ) indicated high abdominal obesity prevalence. Obesity was significantly associated with higher systolic blood pressure ( $p < 0.05$ ) and presence of left ventricular hypertrophy ( $p < 0.01$ ). A positive correlation was observed between WHR and systolic blood pressure ( $r = 0.42$ ,  $p < 0.01$ ). Patients with dyslipidemia had significantly higher BMI values ( $p < 0.05$ ). Additional salt intake was associated with higher blood pressure levels ( $p < 0.05$ ). From a dietary perspective, bread, dairy products, and meat - including processed meat products - were consumed almost universally, while 98.1% of patients reported fish consumption.

**Conclusions.** The high prevalence of excess weight, particularly abdominal obesity, along with unbalanced dietary habits, confirms obesity as a major determinant of hypertensive risk. Inferential analysis supports significant associations between obesity indicators and blood pressure, emphasizing the need for targeted nutritional interventions and abdominal obesity reduction strategies in hypertension prevention and control.

**Keywords:** arterial hypertension, obesity, nutritional status, prevention.

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## ASSESSMENT OF LIFESTYLE AND SOCIOECONOMIC DETERMINANTS OF HEALTH BEHAVIORS IN A COMMUNITY-BASED CROSS-SECTIONAL STUDY

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**Introduction.** Lifestyle behaviors and social determinants of health play a fundamental role in the prevention and control of non-communicable diseases, which remain the leading cause of morbidity and mortality worldwide. Analyzing social determinants alongside lifestyle patterns is essential for designing effective health promotion strategies and targeted behavior change interventions.

**Aim of the study.** To assess lifestyle patterns, health behaviors, and socioeconomic determinants within a community-based sample and to identify priority areas for individual behavior change interventions.

**Material and methods.** A descriptive cross-sectional study was conducted within the module “Health Promotion and Health Education.” Data was collected using a structured questionnaire through direct interview or self-completion (online link/QR code). Each participating student collected at least 20 questionnaires from individuals in their social environment (colleagues, family members, or workplace contacts). The questionnaire assessed demographic characteristics, self-perceived health status, dietary habits, physical activity, substance use, mental health indicators, stress and sleep patterns, quality of life, and socioeconomic status.

**Results.** A total of 1480 respondents participated in the study (62.6% female; 58.8% urban residents). Half of the participants rated their health as good (50.3%), while 19.3% reported having a chronic disease. Only 22.8% undergo preventive medical check-ups regularly. Daily smoking was reported by 12.8% of respondents and occasional smoking by 11.8%, despite high awareness of smoking risks (79.8%). Alcohol was consumed occasionally by 56.9%, weekly by 4.0%, and daily by 1.1%. Regarding lifestyle behaviors, 39.7% reported rarely engaging in physical activity and 5.8% never exercise, while only 25.7% practice daily activity. Nearly one-third (29.8%) do not consume fruits and vegetables daily, and 21.2% consume fast food weekly. Frequent stress was reported by 34.5% of respondents, and irregular sleep patterns were common. Although 64.4% considered their income sufficient, a considerable proportion reported financial constraints influencing lifestyle choices. Importantly, 67.6% acknowledged the need to change their behavior to improve their quality of life, and most expressed moderate to high motivation to adopt healthier habits.

**Conclusions.** The study highlights the coexistence of multiple modifiable behavioral risk factors influenced by socioeconomic conditions. The applied educational research model enabled the identification of priority problematic behaviors and facilitated the development of individualized behavior change plans with measurable objectives and concrete intervention measures, strengthening preventive competencies and evidence-based health education practices.

**Keywords:** lifestyle, health behaviors, social determinants of health, community study, health promotion, cross-sectional study.

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## **FAMILY ROUTINE STABILITY AND PARENT-CHILD PHYSICAL CO-ACTIVITY AS BEHAVIORAL RESOURCES DURING WARTIME**

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**Introduction.** Wartime disrupts daily routines, sleep, physical activity and emotional regulation in families with children. Parent-child physical co-activity, including walking and other movement, may be both a health-promoting behavior and a marker of preserved family functioning. Understanding these family-level resources may help identify feasible targets for health promotion and prevention in crisis settings.

**Aim of the study.** To examine whether family routine stability and regular parent-child physical co-activity are associated with anxiety and depressive symptoms among Ukrainian school-age children and their parents during wartime.

**Material and methods.** Data were obtained from online surveys of parents of school-age children in Ukraine conducted in 2022-2025. After standard exclusions, the analytical sample included 8,371 parent-child dyads. Regular parent-child co-activity was defined as shared movement activities at least 3 times per week. Family routine stability was assessed using a coherence index and categorized as low, medium, or high. Logistic regression models were adjusted for survey year, child age and sex, migration status, type of residence, child chronic diseases, child BMI group, parental age, sex, education, and chronic diseases.

**Results.** Overall, 82.0% of families reported at least some parent-child physical co-activity, and 56.1% reported regular co-activity at least 3 times per week. High family routine stability was associated with lower odds of depressive symptoms in children (OR=0.45; 95% CI: 0.38-0.54;  $p<0.001$ ), anxiety symptoms in children (OR=0.78; 95% CI: 0.62-1.00;  $p=0.045$ ), depressive symptoms in parents (OR=0.62; 95% CI: 0.53-0.71;  $p<0.001$ ), and anxiety symptoms in parents (OR=0.58; 95% CI: 0.50-0.68;  $p<0.001$ ). Regular co-activity was independently associated with lower odds of depressive symptoms in children (OR=0.88; 95% CI: 0.77-1.00;  $p=0.046$ ) and parents (OR=0.82; 95% CI: 0.74-0.91;  $p<0.001$ ), while its association with child anxiety was not significant.

**Conclusions.** During wartime, family routine stability was the most consistent behavioral resource associated with lower anxiety and depressive symptoms in children and parents. Regular parent-child physical co-activity may reflect preserved family organization and emotional resources, while potentially supporting daily structure, co-regulation and mental health. These findings support family-oriented prevention strategies targeting routine stability and shared activity as accessible resources for reducing psychosocial and behavioral risks related to non-communicable diseases in crisis settings.

**Keywords:** wartime, family routine, parent-child co-activity, physical activity, mental health, prevention.

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## **CONTAMINATION OF AGRICULTURAL PRODUCTS IN TERRITORIES AFFECTED BY HOSTILITIES IN UKRAINE: A RISK-ORIENTED APPROACH TO HEALTH IMPACT ASSESSMENT**

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**Introduction.** Under conditions of warfare, the issue of agricultural product safety becomes particularly relevant. The destruction of industrial facilities and infrastructure, fires, explosions, and the release of combustion products, fuels and lubricants, and toxic substances into the environment create additional sources of soil and food-chain contamination. Products from household plots pose a particular risk, as they are often consumed regularly without proper laboratory control. Under these conditions, it is important to apply a risk-oriented approach that takes into account contaminant levels in food products, consumption volumes, and regional dietary patterns of the population.

**Aim of the study.** To substantiate a risk-oriented approach to assessing the health impact on the population of food products contaminated with toxic substances as a result of warfare.

**Material and methods.** A set of analytical and laboratory methods was used in the study. To assess the consumption of priority food groups, materials from the State Statistics Service of Ukraine, food balance indicators, and FAOSTAT data on the consumption of vegetables, potatoes, and cereal products were analyzed. The obtained data were standardized for further comparisons and exposure calculations. A separate stage involved studying the content of heavy metals in food products and agricultural raw materials. Samples were collected in locations with a high probability of contamination by ecotoxicants due to their proximity to areas of military activity. Mass concentrations of cadmium, lead, copper, and zinc were determined using stripping voltammetry. To establish the methodological basis for risk assessment, documents from Codex Alimentarius, FAO/WHO JECFA, EFSA, EU regulations and the FDA Total Diet Study were also analyzed. Based on the obtained data, an impact assessment algorithm was developed, including hazard identification, sampling and laboratory control, dietary exposure assessment, risk characterization, and the preparation of preventive recommendations.

**Results.** The study showed that contamination of food products and agricultural raw materials with heavy metals in territories affected by hostilities was uneven and was detected in approximately 7-10% of samples. Lead contamination had the greatest hygienic significance, particularly in certain cereal crops and some vegetables. The detected exceedances were mostly minor; therefore, in the case of occasional consumption of such products, the health risk to the population is assessed as low or moderate. At the same time, regular consumption of locally grown products from potentially contaminated household plots may increase the likelihood of adverse health effects due to chronic intake of heavy metals. It was shown that vegetables, potatoes, and cereals constitute a substantial share of the population's diet, while regional differences in dietary structure influence the level of potential risk. In western, northern, and central regions, potatoes, vegetables, and cereals may make a greater contribution to potential cadmium and lead intake, whereas in southern and partly eastern regions, vegetables and fruits may contribute more substantially.

**Conclusions.** The need for differentiated monitoring of the safety of agricultural products in territories affected by hostilities has been substantiated. It was established that heavy metal contamination is local and uneven in nature, while the main risk is associated with regular consumption of products from potentially contaminated household plots. Based on laboratory findings and international approaches developed by FAO/WHO, JECFA, Codex Alimentarius, and the EU, a step-by-step scheme was developed for assessing the impact of food products contaminated with toxic substances on public health.

**Keywords:** war, Ukraine, heavy metals, lead, cadmium, agricultural products, food safety, public health.

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**INSTITUTIONAL COMMUNICATION AS A PUBLIC HEALTH GOVERNANCE TOOL**  
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**Introduction.** Una dintre cele zece operatiuni de sanatate publica este comunicarea, Este importatan pentru aplicarea celor 3P Health protection, disease prevention, and health promotion (3P) are core functions of contemporary public health systems aimed at reducing the burden of non-communicable diseases and strengthening population resilience Therefore, strategic institutional communication is instrumental in supporting public trust, health literacy, behavioral communication, and multisectoral collaboration. In the Republic of Moldova, the National Agency for Public Health (NAPH) approved its first Institutional Communication Strategy and Communication Action Plan 2025-2030 as part of an institutional transformation process aligned with European Union standards and the “Health 2030” National Strategy.

**Aim of the study.** To develop and implement an evidence-based Institutional Communication Strategy and Communication Action Plan 2025-2030 designed to strengthen communication capacities within NAPH, improve institutional visibility and organizational culture, and support public health governance focused on health protection, disease prevention, and health promotion.

**Material and methods.** The strategy was developed using a mixed-methods approach integrating qualitative and quantitative research methods specific to communication sciences and public health management. The research included SWOT and PESO analyses, stakeholder mapping, in-depth interviews with senior managers, and questionnaire-based assessments among employees from different institutional levels. The conceptual framework incorporated constructivist approaches and the Diffusion of Innovations theory to support organizational communication change.

**Results.** The study highlighted the need to redefine institutional communication according to international public health approaches centered on protection, prevention, health promotion, and multisectoral collaboration. Findings emphasized the transition from historically control-oriented communication practices associated with the former sanitary-epidemiological model toward interdisciplinary and intersectoral communication focused on public engagement, health literacy, and responsible health behaviors. The Strategy and Action Plan 2025-2030 established objectives aimed at strengthening communication capacities, improving institutional communication processes, consolidating organizational culture, and increasing the visibility and credibility of NAPH. Communication was positioned as a public health governance tool supporting health promotion, health literacy, behavioral change communication, and multisectoral collaboration aimed at preventing non-communicable diseases and strengthening population resilience.

**Conclusions.** Institutional communication is an essential tool of contemporary public health governance and contributes to strengthening health literacy, public trust, and prevention-oriented public health approaches. The development and implementation of the NAPH Institutional Communication Strategy and Communication Action Plan 2025-2030 demonstrate the role of strategic communication in supporting health promotion, behavioral change, and multisectoral collaboration for the prevention of non-communicable diseases.

**Keywords:** institutional communication, public health governance, health promotion, disease prevention, health literacy, behavioral change communication, non-communicable diseases

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#### **CHILDHOOD INJURIES IN THE REPUBLIC OF MOLDOVA: A POPULATION-BASED STUDY, 2015–2023**

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**Introduction.** Injuries represent a major public health concern among children. They encompass a wide range of conditions, and globally, within the overall burden of injuries, violence, and self-harm, road traffic injuries account for the largest proportion (30.9%), followed by falls (20.8%) and self-harm (15.9%). Road traffic injuries are responsible for the deaths of approximately 2,000 children under the age of 14 worldwide each day.

**Aim of the study.** This study aimed to assess trends, burden, and risk factors of injuries among children aged 0–17 years in the Republic of Moldova between 2015 and 2023, with particular emphasis on the prevalence, distribution, and mortality associated with road traffic injuries and other external causes of trauma.

**Material and methods.** A descriptive population-based study was conducted using official data obtained from the statistical yearbooks of the national electronic health system of the National Agency for Public Health (ANSP). Data were extracted from statistical reports No. 12-săn (Registered Diseases) and No. 12t-săn (External Causes of Injuries) for nine years (2015–2023). Indicators of morbidity and mortality due to injuries, including road traffic injuries and associated risk factors, were analyzed among children aged 0–17 years, 11 months, and 29 days.

**Results.** In the overall morbidity structure among children aged 0–17 years, traumatic injuries, poisonings, and other consequences of external causes ranked third nationally during 2015–2023, with an average of 411.5±53.0 cases per 10,000 population. In Chișinău, these conditions ranked second, reaching 1,421.2±235.6 cases per 10,000 population. Among external causes of injury, domestic injuries predominated, accounting for 75.1% nationally and 72.2% in Chisinau. Street- and school-related injuries ranked second nationally. In Chișinău, school-related injuries ranked second (11%), followed by street injuries (8.1%) and sports injuries (4.4% nationally). Road traffic injuries ranked fourth nationally (1.4%) and fifth in Chișinău (2.1%).

**Conclusions.** Injuries represent a major public health concern among children in the Republic of Moldova, ranking third in the overall morbidity structure. Domestic injuries are the most frequent, followed by school-related and street injuries. Although less prevalent, road traffic injuries remain a significant cause of mortality, underscoring the urgent need for multisectoral interventions, strengthened surveillance systems, and the development of evidence-based prevention policies.

**Keywords:** children, injury, road traffic injuries, morbidity, public health.

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## A MULTIDIMENSIONAL FORENSIC MODEL TO IMPROVE FIREARM INJURY SURVEILLANCE AND PREVENTION: A PUBLIC HEALTH APPROACH TO DEATH CLASSIFICATION

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**Introduction.** Gunshot mortality is a major and avoidable type of injury in the world, and it is an area of major public health concern. The correct identification of the manner of death (suicide or homicide) is crucial to effective injury surveillance, epidemiological surveillance, and the development of specific prevention strategies. The wrong classification of firearm deaths can bias the countrywide mortality rates and undermine national health policies for violence and suicide prevention.

**Aim of the study.** This study will set out to establish how the integration of anatomical injury patterns and ballistic patterns into a multidimensional forensic model can help differentiate between a suicide and a homicide case involving a fatally shot victim and improve the accuracy of the injury surveillance system.

**Material and methods.** The study was a prospective, uncontrolled study done in Erbil, Iraq, in 2025-2026 at a medico-legal institute. A hundred autopsy-proven firearms deaths were systematically studied with the assistance of standardized medico-legal reports, radiology where necessary, and examination of the scene and surroundings. Data analysis was performed by chi-square and Fisher's exact test and then multivariable binary logistic regression. The performance of the models was measured by receiver operating characteristic (ROC) analysis.

**Results.** Among the 100 cases of fatal firearm injuries, 62% were suicides and 38% were homicides; no accidental deaths were found. Head entry wounds were mostly linked to suicides (71%), whereas entry through the chest wounds was most frequently linked to homicides (56%) ( $p < 0.001$ ). Burn traces/soot could be found in 81% of suicides versus 21% of homicides ( $p < 0.001$ ). Two or more gunshot wounds were found to be much higher in homicides than in suicides (42% vs. 10%,  $p < 0.001$ ). Retention of projectiles was noted in 29 percent of homicide cases as compared with 6 percent of suicide cases ( $p < 0.001$ ). Head entry site (OR 18.4, 95% CI 7.2-47.1), burn traces/soot (OR 14.6, 95% CI 5.8-36.2), and morphology of the stellate/burst exit wound (OR 8.9, 95% CI 2.4-331) were identified as independent risk factors of associated with increased odds of the death being a suicide using multivariate logistic regression. Multiple wounds (OR 6.7; 95% CI 2.1-213) and retained projectiles were linked with increased odds of being a homicide. The last model was highly discriminating (AUC=0.91) and achieved an overall classification accuracy of 89%.

**Conclusions.** A multifaceted approach to forensic issues will greatly improve our ability to distinguish suicide and murder in shootings involving firearms, rather than a one-dimensional approach. Improved categorization accuracy reinforces the injury surveillance systems, promotes evidence-based approaches to mitigating gun violence, and helps in the management of people and planning violence prevention.

**Keywords:** gunshot wounds, forensic pathology, forensic study, ballistic trajectory, wound shape, death categorization, way of death.

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## EVALUATION OF SELF-REPORTED PEDESTRIAN RISK BEHAVIORS IN THE CONTEXT OF ROAD INJURY PREVENTION

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**Introduction.** Road traffic injuries remain a leading cause of mortality and disability worldwide, with pedestrians representing one of the most vulnerable categories of road users. In the Republic of Moldova, pedestrians account for a substantial proportion of road fatalities, highlighting the need for behavioral and infrastructural assessment from a public health perspective.

**Aim of the study.** To assess pedestrian road behavior and identify behavioral and contextual risk factors associated with unsafe practices in traffic environments.

**Material and methods.** A cross-sectional study was conducted using an anonymous structured online questionnaire distributed via social media platforms and academic networks. The study included individuals aged  $\geq 18$  years who voluntarily agreed to participate. The questionnaire assessed compliance with traffic rules, crossing behavior, use of pedestrian crossings and traffic lights, distraction factors, and perceived safety. A total of 300 respondents were included. Data were analyzed using descriptive statistics, with subgroup comparisons by area of residence (urban/rural).

**Results.** Most respondents were aged 18-24 years (42.3%), female (66.7%), and from urban areas (68.3%). Self-reported distracted behavior was more frequently observed among urban participants (39%) compared to rural ones (11.7%). Daily mobile phone use while crossing was reported by 59% and was associated with a higher proportion of self-reported dangerous situations. The most common distractions included texting (40.7%), checking notifications (39%), and listening to audio content (38%). Additionally, 16.7% reported being frequently rushed and inattentive. Overall, 52% reported at least one dangerous situation due to inattention, including 43% near-miss incidents and 10.7% collisions. Despite this, 88% recognized distraction as a major risk factor. Respondents supported preventive measures such as stricter fines for unsafe crossing (61.3%), improved pedestrian infrastructure (47%), enhanced visibility of traffic signals (46%), and educational interventions (over 42%).

**Conclusions.** Pedestrian safety represents a significant public health concern. The high proportion of self-reported risky behaviors, combined with infrastructural deficiencies, increases pedestrian vulnerability in urban traffic. Integrated interventions focusing on behavioral change, traffic calming measures, infrastructure improvement, and enforcement of regulations are essential to reduce pedestrian-related injuries and fatalities in the Republic of Moldova.

**Keywords:** pedestrian safety, road traffic injuries, behavioral risk factors, urban health, traffic prevention, public health.

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## **CHILD RESTRAINT SYSTEM USE AMONG CHILDREN AGED 0–6 YEARS IN YEREVAN: PREVALENCE, BARRIERS, AND ASSOCIATED FACTORS**

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**Introduction.** Child road safety represents a major public health priority. Child restraint systems (CRS) are among the most effective interventions for preventing injuries and deaths in road traffic accidents. Although mandatory CRS legislation has been introduced in the Republic of Armenia in recent years, limited evidence exists regarding their actual use and the barriers to compliance among parents in Yerevan.

**Aim of the study.** To assess the prevalence of child restraint system use among children aged 0–6 years in Yerevan and to evaluate its dynamics since 2019 compared with data from the last local survey conducted in 2018. Additional objectives included identifying major barriers to CRS use and examining the association between parental awareness and CRS utilization.

**Material and methods.** A cross-sectional study was conducted using an interviewer-administered structured questionnaire. The target population included parents and caregivers of children aged 0–6 years residing in Yerevan. A total of 196 participants were enrolled. Data were analyzed using descriptive statistics, cross-tabulations, and the chi-square ( $\chi^2$ ) test. Binary logistic regression analysis was performed to identify independent predictors of CRS use.

**Results.** The prevalence of CRS use in Yerevan was 53.6%, indicating a positive trend compared with 2018 (26.6%), though usage remains suboptimal. CRS use was significantly higher among parents with adequate awareness, and awareness level showed a statistically significant association with CRS utilization ( $p < 0.001$ ). In contrast, knowledge of the legal requirement alone was not significantly associated with use. Among non-users, the most frequently reported barrier was child refusal to sit in the seat (55.7%), followed by high cost (13.4%) and the perception that CRS is unnecessary (10.3%). Logistic regression analysis identified driver seatbelt use as an independent predictor of CRS utilization (OR=3.28; 95% CI: 1.25–8.63;  $p=0.016$ ).

**Conclusions.** Despite observed improvement, CRS use in Yerevan remains insufficient. Effective intervention requires a comprehensive approach combining enhanced public awareness, parental education, behavioral support strategies, and strengthened enforcement mechanisms.

**Keywords:** child restraint system, road safety, parental awareness, injury prevention, logistic regression, Armenia.

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## ROAD TRAFFIC INJURIES AMONG CHILDREN IN GEORGIA

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**Introduction.** Road traffic injuries (RTIs) constitute an important public health issue worldwide and are a leading cause of injury and death among children and adolescents. In Georgia, children are especially vulnerable road users due to limited risk perception and exposure to unsafe traffic environments. Understanding the epidemiological characteristics of RTIs is essential for developing effective prevention strategies and improving child road safety.

**Aim of the study.** To analyze the epidemiological characteristics of road traffic injuries leading to hospitalization among children aged 0-18 years in Georgia during 2015-2020.

**Material and methods.** Hospitalization data were obtained from the National Center for Disease Control and Public Health of Georgia. RTI-related cases were identified using ICD-10 codes. The study included all hospitalized patients aged 0-18 years during the study period. Descriptive statistical analysis was performed using SPSS version 20 to assess the distribution of cases by year, sex, age, injury type, and hospitalization outcomes.

**Results.** Between 2015 and 2020, 3,567 children were hospitalized due to road traffic injuries, accounting for approximately 0.5% of all hospital discharges. The highest number of hospitalizations was recorded in 2018 (18.5%), while the lowest occurred in 2020 (14.2%). Boys represented the majority of cases (66%). The mean and median ages were 12 and 13 years, respectively. Injuries were most frequent during the summer months (June - August). Head injuries were the most common (67%), followed by injuries to the lower and upper limbs (18%) and multiple injuries (10%). Most children (68.9%) were discharged within three days. During the study period, 54 in-hospital deaths (1.5%) were recorded, more than half occurring among pedestrians, cyclists, and motorcyclists. Fatal cases were most commonly associated with multiple trauma (46%) and severe head injuries (43%).

**Conclusions.** Road traffic injuries remain an important cause of hospitalization and mortality among children in Georgia. The findings highlight the need for targeted prevention strategies and stronger road safety policies aimed at protecting vulnerable child road users, particularly pedestrians, cyclists, motorcyclists, and young passengers.

**Keywords:** road traffic injuries, child safety, epidemiology, hospitalization, public health, Georgia.

**Acknowledgement.** The work reported in this publication was funded by the NIH-Fogarty International Trauma Training Program at the University of Iowa (D43TW007261). The authors gratefully acknowledge all members of the iCREATE for their work on the project overall and for the contributions of project documentation used in this study.

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## TERTIARY PREVENTION OF MUSCLE PAIN IN ATHLETES THROUGH PHYSIOTHERAPEUTIC INTERVENTIONS

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**Introduction.** Muscle pain is one of the most frequent conditions encountered among athletes, significantly influencing training capacity and competitive performance. Its high incidence, risk of recurrence, and potential long-term consequences on sports careers emphasize the importance of implementing effective prevention and treatment strategies. In this context, physiotherapy plays a central role in the management, rehabilitation, and prevention of muscle pain.

**Aim of the study.** To evaluate the effectiveness of physiotherapy in the treatment and prevention of muscle pain in athletes.

**Material and methods.** The study included 100 athletes aged between 13 and 35 years, practicing football, athletics, and weightlifting, diagnosed with muscle strains (37%), muscle injuries (49%), and overuse of low back pain (14%). Therapeutic protocols were individualized according to the type and severity of the condition and included low-intensity laser therapy, Transcutaneous Electrical Nerve Stimulation (TENS), Capacitive and Resistive Energy Transfer (TECAR) therapy, magnetotherapy, and physiotherapy exercises. These interventions were applied progressively over a period of 5 to 10 days. Clinical and functional parameters were assessed before and after treatment. Statistical analysis included descriptive and inferential methods, with significance set at  $p < 0.05$ .

**Results.** The applied physiotherapy program demonstrated statistically significant effectiveness ( $p < 0.05$ ), reflected by pain reduction, increased muscle strength, and improved functional capacity across all patient groups. In athletes with muscle injuries, pain assessed using the Visual Analogue Scale (VAS) decreased from  $10 \pm 0.0$  points to  $2 \pm 0.8$  points, representing an average reduction of approximately 80%. Muscle strength improved from 3/5 to 5/5, indicating almost complete restoration of muscle function ( $p < 0.05$ ). In cases of muscle strains, VAS values decreased from 6-7 points initially to 0 points after 5-7 days of treatment, corresponding to full remission of pain. Improvements in range of motion and reduction of muscle contracture were also observed, without complications or early relapse. Athletes with overuse of low back pain showed a decrease in VAS scores from 6-8 to 0 points after 10 days of treatment, accompanied by normalization of lumbar mobility and improved trunk stability ( $p < 0.05$ ). The overall recovery rate exceeded 90%, and reintegration into sports activity was achieved safely, without worsening of symptoms in the immediate post-treatment period.

**Conclusions.** Physiotherapy proved to be an effective approach in both the treatment and prevention of muscle pain in athletes, contributing to reduced recovery time and safe return to sports activity. The results support the importance of individualized therapeutic protocols based on clinical evaluation to optimize performance and minimize the risk of recurrence.

**Keywords:** tertiary prevention, muscle pain, athletes, efficiency, physiotherapy.

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## THE STUDY OF EPIDEMIOLOGICAL CHARACTERISTICS OF INJURIES ON THE EXAMPLE OF ONE HOSPITAL IN TBILISI, GEORGIA

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**Introduction.** Traumatic injuries represent a major public health challenge worldwide and disproportionately affect low- and middle-income countries, where injury surveillance systems are limited. In Georgia, epidemiological data on injuries remain scarce, hindering the development of effective prevention strategies and evidence-based health policies. Hospital-based data offer an opportunity to describe injury patterns, identify high-risk groups, and assess healthcare utilization related to trauma.

**Aim of the study.** The aim of this study was to explore the epidemiology of traumatic injuries in Georgia using data from one hospital in Tbilisi, with a focus on age and sex distribution, injury mechanisms and causes, hospital length of stay, and outcomes in 2022.

**Material and methods.** A retrospective descriptive study was conducted using the 2022 hospital admission database of the National Center for Disease Control and Public Health of Georgia. Injury-related hospitalizations recorded from one high-admission hospital in Tbilisi during 01.01.2022–31.12.2022 were analyzed using SPSS with descriptive and analytical statistical methods.

**Results.** In 2022, 1,101 patients were hospitalized due to traumatic injuries; 64% were male (male-to-female ratio 1.8:1). Ages ranged from 0 to 92 years, with the 10-19-year group most affected (16.8%). Most patients lived in urban areas (96%). Unintentional injuries predominated (85%), with falls being the leading mechanism (77%). Head (29%), upper extremity (28%), and lower extremity (18%) injuries were most common. Mean hospital stay was 3.17 days. Most patients were discharged after treatment (95%), and in-hospital mortality was 2.5%. Age, injury characteristics, hospital stay and outcomes were significantly associated ( $p < 0.01$ ).

**Conclusions.** This study demonstrates that traumatic injuries requiring hospitalization in Tbilisi mostly affect males and adolescents, with falls being the leading mechanism across all age groups. The findings highlight the need for strengthened injury surveillance and targeted prevention programs, particularly fall-prevention strategies and youth-focused interventions. Improved data collection and multicenter studies are essential to support effective public health planning and reduce the injury burden in Georgia.

**Keywords:** injury, hospitalization, epidemiological characteristics, Georgia.

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## FIVE-YEAR TRENDS IN INJURY HOSPITALIZATION ON THE EXAMPLE OF ONE REGION, GEORGIA

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**Introduction.** Injuries rank as one of the leading causes of death and long-term impairment globally. They frequently result in temporary or permanent disability, necessitating extended physical and mental health care as well as rehabilitation. Injuries and violence are major contributors to death and disease worldwide, placing significant financial and quality-of-life burdens on individuals and communities.

**Aim of the study.** To investigate and characterize the epidemiological features and 5 year trends of injuries (2018-2022) in the Kakheti region (Georgia), providing crucial data to inform effective prevention programs.

**Material and methods.** This retrospective study examines the epidemiological characteristics of injuries in the Kakheti region from 2018 to 2022. Data from the National Center for Disease Control and Public Health in Georgia were analyzed. The dataset comprised detailed records of all trauma patients hospitalized in both private and public healthcare facilities across Kakheti. Injuries were classified using the ICD-10 system, and statistical analysis was performed using SPSS.

**Results.** A total of 7,861 injury-related hospitalization cases were identified. Males comprised 59.8% (4,700) of patients, while females accounted for 40.2% (3,161). Patients' ages ranged from 0 to 104 years, with a median and mean age of 46 years. The most frequent age group was 65 years and older (29.5%; 2,317 cases), followed by the 25-44 age group (22.9%; 1,801 cases). Falls were the most common mechanism of injury (50.9%; 4,001 cases), followed by road traffic accidents (23.8%; 1,869 cases). The head was the most commonly affected body region (34%; 2,674 cases). The average hospital stay was four days, with one day being the most frequent length of stay.

**Conclusions.** This study provides essential information about hospitalizations for traumatic injuries in the Kakheti region of Georgia, addressing a significant gap in previously unavailable regional data. The findings support evidence-based public health planning and the development of targeted prevention strategies. Although the study includes only hospitalized cases, it offers a strong basis for improving healthcare services and strengthening injury prevention efforts in Kakheti.

**Keywords:** injury, hospitalization, epidemiological characteristics, trends, Kakheti, Georgia.

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## IMPLEMENTING A CHRONIC DISEASE SELF-MANAGEMENT PROGRAM IN MOLDOVA: A ROADMAP FOR SUSTAINABILITY

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**Introduction.** Chronic diseases are responsible for more than half of global deaths remain a major challenge for health systems. Daily management largely depends on patients, making self-management interventions essential in modern care. In Moldova, the burden of chronic disease is particularly high in rural communities where access to support for self-management is limited. The Chronic Disease Self-Management Program (CDSMP) was locally adapted and implemented as a community-based, peer-facilitated intervention to strengthen patients' capacity to manage their conditions and prevent complications.

**Aim of the study.** The aim of the study was to evaluate the impact of a community-based chronic disease self-management program implemented in rural communities of Moldova, using a mixed-methods before-after design to assess changes in self-efficacy and participant satisfaction, and to inform its adaptation for sustainability.

**Material and methods.** Since 2020, the program has been evaluated in 20 rural communities, involving 267 adult participants with chronic diseases and 40 trained facilitators. A mixed-methods design was applied. Quantitative data were collected using the 6-item Self-Efficacy Scale before and after the program, alongside a 10-item Satisfaction Questionnaire. Qualitative data were collected through 20 focus groups with participants and facilitators.

**Results.** Currently, the program has reached 1,432 beneficiaries in 70 rural communities, with an estimated cost of €74 per participant. Quantitative results showed a significant increase in self-efficacy, with mean scores rising from 4.5 to 8.5 ( $p < 0.001$ ). Participants reported greater confidence in managing symptoms, fatigue, emotions, and daily health routines, with high satisfaction (99.2%). Qualitative findings at short-term indicated adoption of healthier behaviors, improved patient-provider communication, and the establishment of personal health goals. Facilitators with lived experience of chronic illness fostered trust and engagement, resulting in greater participant motivation and support for broader program implementation. Evaluation evidence informed the inclusion of self-management in the 2023-2027 National Non-Communicable Disease Program and supported the development of a roadmap for sustainable integration within Moldova's public health system.

**Conclusions.** The CDSMP proved acceptable and effective in rural Moldovan communities, improving self-efficacy, promoting healthier behaviors, and strengthening responsibility for disease management. Positive outcomes among participants and facilitators highlight its potential to support community-level chronic disease management. The findings support scaling and institutionalizing the program for sustainable long-term impact.

**Keywords:** noncommunicable diseases, self-management, sustainability, rural communities, Moldova.

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## EPIDEMIOLOGICAL CHARACTERISTICS AND RISK FACTORS OF TRAUMA IN ELDERLY PATIENTS

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**Introduction.** Population aging has become one of the most important demographic trends worldwide and is associated with an increasing burden of trauma in older adults. Age-related physiological changes, the presence of chronic diseases, functional decline, and the frequent use of multiple medications increase both the risk of injury and the severity of its consequences. In elderly patients, even low-energy trauma may lead to serious complications, prolonged recovery, loss of independence, and increased mortality. Therefore, the study of trauma characteristics and associated risk factors in this population is essential for improving prevention and care strategies.

**Aim of the study.** To evaluate the epidemiological and clinical characteristics of trauma in elderly patients and to identify the main risk factors and possible preventive measures.

**Material and methods.** A descriptive cross-sectional study was conducted among elderly patients aged over 60 years who experienced traumatic injuries and addressing to family doctors. The study included a sample of 100 patients. Data were collected using a structured questionnaire developed according to the study objectives and through analysis of medical documentation. The questionnaire consisted of six sections covering socio-demographic characteristics, medical history and chronic diseases, circumstances of trauma, types and severity of injuries, hospitalization and rehabilitation, and preventive measures. The collected data were processed using descriptive statistical methods, and the results were expressed as percentages.

**Results.** Falls from the same level were the most common cause of trauma (50%), followed by road accidents (32%). Most injuries occurred at home (52%) or on the street (42%). Fractures were the most frequent type of injury (50%), followed by contusions (46%), wounds (32%), traumatic brain injuries (26%), and dislocations (26%). Lower limbs (48%) and the thoracic region (46%) were the most affected anatomical areas. The majority of patients required hospitalization (66%), and 40% underwent surgical treatment. Chronic diseases were highly prevalent, particularly hypertension (94%), cardiovascular diseases (42%), osteoporosis (32%), and diabetes mellitus (18%). Balance disorders and dizziness were reported by 70% of participants, and 45% experienced at least one fall during the previous year. Only 38% of homes were adapted for fall prevention.

**Conclusions.** Trauma in elderly patients represents an important public health issue due to its high frequency and significant functional impact. Most injuries are preventable and are associated with modifiable medical and environmental factors. Early identification of risk, medication review, physical activity adapted to functional status, and improvement of home safety conditions may reduce the incidence of injuries and contribute to maintaining independence and quality of life.

**Keywords:** elderly, trauma, falls, risk factors, fractures, prevention, public health.

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### HELICOBACTER PYLORI INFECTION AND ITS IMPACT ON GASTRIC PATHOLOGY IN ELDERLY PATIENTS

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**Introduction.** The Correa cascade of gastric carcinogenesis begins with superficial chronic gastritis (non-atrophic), induced by *Helicobacter pylori* (HP), progressing to chronic atrophic gastritis, gastric intestinal metaplasia, gastric epithelial dysplasia, and ultimately gastric cancer (GC). The risk of developing precancerous gastric lesions increases significantly with age, particularly among elderly patients. Prevention and eradication of HP infection are the most effective strategies for preventing the development of GC.

**Aim of the study** was to evaluate the association between HP infection and the occurrence of precancerous gastric lesions and GC in elderly patients.

**Material and methods.** A retrospective observational study was conducted on 132 patients aged 60 years and older who underwent upper gastrointestinal endoscopy for dyspeptic symptoms between 2023 and 2025. Gastric biopsies were obtained during endoscopy and evaluated histologically. The presence of HP infection was determined using rapid urease testing and histopathological examination. Gastric mucosal lesions were classified as chronic non-atrophic gastritis, chronic atrophic gastritis, gastric intestinal metaplasia, gastric epithelial dysplasia, or GC. Patients were divided into HP-positive and HP-negative groups. Statistical analysis was performed using descriptive statistics and chi-square testing to evaluate the association between infection and gastric pathology.

**Results.** The mean age of the patients included in the study was  $68.7 \pm 6.4$  years, with a slight predominance of females (56%). HP infection was detected in 78 patients (59.1%). Chronic non-atrophic gastritis was diagnosed in 46 patients (34.8%), chronic atrophic gastritis in 38 patients (28.8%), gastric intestinal metaplasia in 25 patients (18.9%), gastric epithelial dysplasia in 12 patients (9.1%), and GC in 11 patients (8.3%). Precancerous gastric lesions were significantly more frequent among patients with HP infection. In the HP-positive group, chronic atrophic gastritis was present in 38.4% of cases, intestinal metaplasia in 24.3%, epithelial dysplasia in 11.5%, and GC in 8.9%. Statistical analysis demonstrated a significant association between HP infection and the presence of precancerous gastric lesions in elderly patients ( $p < 0.05$ ).

**Conclusions.** HP infection represents an important risk factor for the development of chronic inflammatory and preneoplastic gastric lesions in elderly patients. The relatively high prevalence of atrophic gastritis and intestinal metaplasia observed in infected individuals highlights the importance of early detection and eradication therapy. Regular endoscopic surveillance and appropriate management strategies may contribute to reducing the risk of progression toward GC in the elderly population.

**Keywords:** *Helicobacter pylori*, elderly, gastric precancerous lesions, intestinal metaplasia, gastric cancer.

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## CARDIOVASCULAR RISK FACTORS AMONG ATHLETES

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**Introduction.** High-performance sports are characterized by a series of physiological adaptations in the cardiovascular system (CVS), which, under certain conditions, may overlap with the presence or onset of pathological conditions. Cardiovascular evaluation in athletes enables assessment and monitoring of health status and promotes physical activity in optimal safety conditions. Understanding the specific features of ECG interpretation in athletes is essential for distinguishing physiological patterns from pathological ones and determining when additional investigations are required. When asymptomatic athletes present ECGs with pathological features that clinical or paraclinical findings cannot confirm, clinical uncertainty may arise.

**Aim of the study.** To examine the early diagnosis of conditions associated with increased cardiovascular risk in sports, using ECG investigation as the primary screening tool.

**Material and methods.** A cross-sectional study was conducted, including 5,451 child athletes examined at the National Center for Sports Medicine "Atletmed" from Chisinau, Republic of Moldova. The study material consisted of medical records of athletes presenting pathological ECG deviations. The examination strategy, diagnostic confirmation, and dynamic monitoring of indicators were analyzed.

**Results.** Data from 2024 shows that 7,223 people were screened, with 5,451 (75.5%) of them being children. Most of them had a full medico-sportive evaluation. Among the 7,160 ECG examinations conducted overall, the majority involved children's non-dosed exercise ECGs (4,616, or 90.2%). Sinus bradycardia or sinus arrhythmia was the most common physiological ECG deviation (3,628; 78.6%). T-wave inversion in anterior leads (1,865; 4%) and axial deviations (3,443; 74.6%) were the most common "borderline" abnormalities. Complex arrhythmias, ventricular pre-excitation, and sporadic atrioventricular block were among the pathological findings. Wolff-Parkinson-White syndrome, ventricular septal defect, and bicuspid aortic valve were among the proven cardiac diseases that nine athletes, including five children, had after further testing. For heart-related causes, two athletes were declared unfit for participation in sports.

**Conclusion.** The results point to a high frequency of electrocardiographic abnormalities in athletes, specifically repolarization abnormalities and sinus rhythm disturbances. Depending on their type and severity, some of these alterations call for further testing, cardiovascular preventive measures, or dynamic monitoring. For the early identification of cardiovascular diseases or premorbid states in this population, ECG evaluation is essential.

**Keywords:** children, athletes, cardiovascular system, ECG, electrocardiographic indicators.

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## THE ROLE OF THE NURSE IN IMPROVING PATIENT SATISFACTION IN PRIMARY HEALTH CARE FACILITIES

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**Introduction.** Patient satisfaction is a critical indicator of medical service quality, particularly in primary healthcare (PHC). This metric is significantly influenced by direct interactions between patients and medical staff, especially nurses, who ensure continuity of care and foster long-term therapeutic relationships. In the Republic of Moldova, recent PHC reforms and a shift toward patient-centered care underscore the need for a comprehensive analysis of nurses' roles in enhancing patient satisfaction.

**Aim of the study.** To analyze the role of nurses in improving patient satisfaction within primary healthcare facilities.

**Material and methods.** A qualitative focus group study was conducted with family nurses from the IMSP University Clinic of Primary Medical Assistance "Nicolae Testemițanu". The interviews explored several domains: the meaning of "patient satisfaction," patients' primary expectations of nursing professionals, nursing activities that significantly influence patient satisfaction, the most appreciated nursing procedures, as well as barriers to achieving patient satisfaction, and the potential contributions of family nurses.

**Results.** The study involved ten family medicine nurses. Qualitative analysis of the focus group revealed five major themes regarding the nursing role in enhancing patient satisfaction:

Empathetic communication and active listening - patient satisfaction hinges on feeling heard, respected, and understood. Clear, calm communication tailored to patients' comprehension levels is fundamental to the therapeutic relationship. 2. Respect, confidentiality, and patient rights upholding the confidentiality of personal data, intimacy, and patient dignity is crucial for building trust. 3. Health education and patient engagement - nurses' roles in educating patients about self-management, preventive measures, and adherence to medical recommendations are vital for improving satisfaction. 4. Barriers and challenges in daily activities - key challenges include time constraints, heavy workloads, overcrowding, and managing anxious or dissatisfied patients, all of which can detrimentally affect patient interactions. 5. Importance of collaboration in the healthcare team - effective collaboration between nurses and family physicians is essential for sound decision-making, continuity of care, and enhanced patient satisfaction.

**Conclusions.** The focus group results indicate that family nurses possess a profound understanding of patient satisfaction and recognize their critical role in its enhancement. Empathetic communication, professional competence, health education, and interdisciplinary collaboration are key factors influencing patient satisfaction in primary healthcare. Moreover, existing organizational barriers highlight the urgent need for systemic measures to optimize nursing activities and improve service quality.

**Keywords:** patient satisfaction, family nurse, primary health care.

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## **AWARENESS OF HEPATITIS B AND C INFECTIONS AMONG ADULT POPULATION IN YEREVAN, ARMENIA**

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**Introduction.** Hepatitis B (HBV) and C (HCV) viruses continue to pose major global public health challenges due to their high potential for chronic infection and long-term liver complications. Understanding the population's knowledge regarding transmission routes, risk factors, preventive measures, and available treatment options is crucial for effective infection control, early diagnosis, and timely management. Despite global efforts, awareness of HBV and HCV remains suboptimal in many regions, including Armenia, which can contribute to delayed testing, low vaccination coverage, and increased transmission risk.

**Aim of the study.** To evaluate the level of awareness and knowledge regarding HBV and HCV, including transmission pathways, risk factors, preventive measures, and health-seeking behaviors, among adults aged 18–60 living in Yerevan, Armenia.

**Material and methods.** A cross-sectional study was conducted from July 2 to August 20, 2024, in three primary healthcare centers: "Erebuni" Medical Center, "Astghik" Medical Center, and "Bagratunyats" Health Center. A non-probability convenience sample of 216 participants, who had never been diagnosed with HBV or HCV, was included. Data were collected using a structured 35-item questionnaire covering sociodemographic characteristics, knowledge of HBV and HCV, transmission routes, risk factors, preventive measures, and potential complications. A knowledge score  $\geq 21 / 35$  was considered indicative of adequate awareness. Statistical analysis was performed using SPSS software. Descriptive statistics were calculated, and Chi-square tests were applied to assess associations between knowledge level and sociodemographic or behavioral variables.

**Results.** A total of 216 participants were included (76.4% female; mean age  $44.17 \pm 12.16$  years). Most participants were married (75.5%) and employed (67.1%), and 36.1% had higher education. Overall, 59.3% of respondents demonstrated insufficient knowledge regarding HBV and HCV. Significant knowledge gaps were identified in the following areas: HBV vaccination (48.2% unaware), diagnostic testing (42.1% unaware), potential long-term complications, availability of treatment options. While bloodborne transmission (84.7%) and non-sterile procedures (77-95%) were well-recognized, only 11.6% of participants reported being vaccinated against HBV. Awareness of sexual transmission and mother-to-child transmission was moderate (71.8% and 72.2%, respectively). Statistical analysis revealed that higher knowledge levels were significantly associated with higher education ( $\chi^2=6.27$ ,  $p=0.044$ ), medical background ( $\chi^2=15.64$ ,  $p<0.001$ ), sources of information ( $\chi^2=14.15$ ,  $p=0.001$ ), prior HBV/HCV testing ( $\chi^2=13.08$ ,  $p<0.001$ ), family history of hepatitis ( $\chi^2=4.03$ ,  $p=0.045$ ).

**Conclusions.** The study reveals that while Yerevan population has basic understanding of HBV and HCV is transmitted there is still suboptimal and insufficient knowledge about effective prevention, early diagnosis, and management. Targeted health education campaigns, increased promotion of HBV vaccination, routine screening, and improved access to reliable information are crucial to enhance knowledge, reduce infection risks, and support public health interventions.

**Keywords:** Hepatitis B, Hepatitis C, Awareness, Prevention, Vaccination, Risk Factors, Public Health.

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## MICROBIOLOGICAL SAFETY OF WELL WATER IN CENTRAL AND SOUTHERN MOLDOVA

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**Introduction.** In the Republic of Moldova, decentralized water sources, such as wells and springs, remain a primary supply for many rural communities. However, these sources are frequently exposed to environmental and anthropogenic pollutants. The presence of coliform bacteria serves as a definitive indicator of fecal contamination, posing severe risks of acute gastrointestinal infections and chronic health conditions. Given the high dependency on these sources, understanding the extent of microbiological contamination is essential for developing effective health promotion strategies and improving public health governance.

**Aim of the study.** To evaluate the microbiological safety of drinking water from decentralized sources in the Central and Southern regions of the Republic of Moldova by determining coliform bacteria levels to assess public health risks.

**Material and methods.** A cross-sectional environmental monitoring study was conducted between May and September 2025. A total of 15 water samples were collected from decentralized sources (household wells) selected through randomized cluster sampling in the Central and Southern regions. Microbiological analysis followed the SM SR EN ISO 9308-1:2015 standard for the detection and enumeration of coliform bacteria. The analytical process focused on identifying colony-forming units (CFU) per 100 mL, comparing results against the national sanitary norms (Law 182/2019). Statistical analysis was performed using SPSS v.26.0, employing the Mann-Whitney U test to compare contamination levels between regions.

**Results.** Laboratory analysis revealed a critical state of microbiological non-compliance in 100% of the investigated sites. In all 15 samples, coliform bacteria concentrations exceeded the maximum allowable limits (0 CFU/100 mL) by dozens of times. Statistical testing showed no significant difference in contamination levels between the Central and Southern regions ( $p > 0.05$ ), indicating a widespread environmental challenge. High levels of contamination were observed regardless of the technical state of the source (e.g., presence of covers). These findings suggest that localized fecal infiltration is prevalent, although the small sample size limits definitive conclusions regarding the entire groundwater aquifer.

**Conclusion.** The extreme levels of coliform bacteria found in decentralized sources represent a major public health threat in the studied regions. The uniformity of contamination highlights an urgent need for improved monitoring and a shift toward centralized, treated water systems. While individual hygiene measures are necessary, they must be supplemented by infrastructure development and rigorous environmental surveillance to prevent waterborne diseases. Further research with a larger sample size is required to assess the integrity of deep aquifers.

**Keywords:** water quality, coliform bacteria, Moldova, public health, decentralized sources, risk factors.

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## THE HIDDEN PULSE: APOB/APOA1 RATIO IN YOUNG ADULTS AS AN EARLY INDICATOR OF CARDIOVASCULAR RISK

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**Introduction.** Metabolic risk factors for chronic non-communicable diseases emerge early in life, although cardiovascular diseases typically become clinically evident much later. Apolipoprotein B (ApoB) and apolipoprotein A-1 (ApoA-1) are essential indicators of lipoprotein balance, reflecting the number of atherogenic and antiatherogenic particles in circulation. Dyslipidemia is a key modifiable contributor to cardiovascular morbidity, and the ApoB/ApoA1 ratio is recognized as a sensitive marker of atherogenic balance.

**Aim of the study.** To evaluate the ApoB/ApoA1 ratio in young individuals as a potential early marker for cardiovascular disease risk.

**Material and methods.** A cross-sectional study was conducted on 176 apparently healthy young adults (48 males, 27.3%; 128 females, 72.7%) with a mean age of 19.7±0.09 years (range 17-25). The sample structure by residence area was 25% (44) from urban areas and 75% (132) from rural areas. Serum concentrations of ApoA1 and ApoB were measured using an immunoturbidimetric assay on the Abbott Architect c8000 analyzer (Apolipoprotein A1, 9D92 21; Apolipoprotein B, 9D93 21), and the ApoB/ApoA1 ratio was calculated.

**Results.** Plasma ApoA1 levels were higher in females than in males, with males showing a mean of 1.00±0.165 g/L (median 0.98; IQR 0.88-1.08) and females a mean of 1.24±0.332 g/L (median 1.19; IQR 1.06-1.32). The total cohort had a mean of 1.17±0.313 g/L (median 1.12; IQR 1.01-1.28). Plasma ApoB concentrations were comparable between sexes, with males presenting 0.50±0.121 g/L (median 0.47; IQR 0.42-0.58) and females 0.53±0.294 g/L (median 0.49; IQR 0.41-0.59), resulting in a cohort mean of 0.52±0.259 g/L (median 0.49; IQR 0.41-0.58). The ApoB/ApoA1 ratio showed clear sex-related differences, being higher in males (0.75 ± 1.217; median 0.40; IQR 0.20-0.92) than in females (0.60±1.354; median 0.20; IQR 0.10-0.40), with an overall cohort mean of 0.64±1.317 (median 0.20; IQR 0.10-0.50), indicating predominantly low atherogenic risk in this young population.

**Conclusions.** The analysis of the ApoB/ApoA1 ratio in this young, apparently healthy cohort indicates an overall low atherogenic profile. Despite the normal values and the indicative risk ratio, males appear to be more exposed to atherogenic risk in this age group. These findings support the utility of the ApoB/ApoA1 ratio as a sensitive indicator of lipoprotein balance, and monitoring this ratio in young individuals may facilitate the implementation of personalized preventive interventions aimed at reducing long-term cardiovascular risk.

**Keywords:** lipoprotein, ratio, young people, risk factors, cardiovascular risk, non-communicable diseases, personalized intervention.

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## **MORBIDITY OF FLUORIDE ASSOCIATED DENTAL CONDITIONS IN DRINKING WATER: AN ANALYSIS BASED ON UTILIZATION OF SPECIALIZED DENTAL SERVICES**

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**Introduction.** The incomplete reporting of pathologies associated with fluoride content in primary statistical records limits the accurate assessment of this factor's impact on oral health. The scientific literature indicates that chronic exposure to elevated fluoride concentrations in drinking water is a major determinant of dental fluorosis and may influence the population-level morbidity structure of hard dental tissue disorders.

**Aim of the study.** To assess morbidity from fluoride-associated conditions based on indicators of utilization of specialized dental care and on documented data regarding services provided during dental visits.

**Material and methods.** The observation period covered the years 2016-2018. The study was conducted in 48 dental offices in the Republic of Moldova, selected from both urban and rural areas. Medical records and primary statistical reports were analyzed regarding the utilization of services by patients with dental fluorosis and carious and non-carious lesions of hard dental tissues. The evaluated indicators included the frequency of visits, distribution by sex, age groups, and place of residence, as well as the territorial characteristics of cases in correlation with fluoride levels in drinking water.

**Results.** Dental offices that reported cases of fluorosis accounted for 58.3% (95% CI: 44.5-72.4), with a predominance in rural areas (70.8%). A total of 11,490 individuals sought care for non-carious conditions and 90,383 for dental caries; the utilization rate for caries-related care was eight times higher ( $p=0.000235$ ). The mean annual number of patients was  $3830.0 \pm 118$ , with a predominance of women (54.7%;  $p < 0.05$ ) and rural residents (90.6%). Most patients with non-carious lesions were adults (81.7%), a pattern associated with age-related dental abrasion. The highest number of fluorosis-related visits was recorded in the districts of Făleşti, Ștefan-Vodă, and Cahul, corresponding to areas with elevated fluoride levels in drinking water. The distribution was similar in both adult and pediatric populations. The mean annual number of patients seeking care for dental caries was  $30,127.7 \pm 2,510.15$ , with a predominance of women (54.9%;  $p=0.047835$ ) and rural residents (77.3%). Most patients were adults (71.4%), possibly influenced by inadequate oral hygiene and high consumption of sugary foods. The highest utilization rates were recorded in the districts of Făleşti and Ștefan-Vodă. In evaluating fluorosis case management, 85.4% of providers reported offering patient counseling, predominantly in rural settings.

**Conclusions.** Morbidity due to dental fluorosis and dental caries shows significant territorial and demographic differences, with higher service utilization in rural areas and a clear correlation with fluoride levels in drinking water. The predominance of caries cases indicates the need to strengthen preventive measures and oral health education.

**Keywords:** dental fluorosis, dental caries, service utilization, rural population, fluoride in drinking water, oral health.

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## **PEDIATRIC HEALTHCARE-ASSOCIATED INFECTIONS IN THE REPUBLIC OF MOLDOVA: DISPROPORTIONATE BURDEN IN PRETERM AND EXTREMELY LOW BIRTH WEIGHT NEONATES**

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**Introduction.** Healthcare-associated infections (HAIs) remain a major public health challenge, particularly in pediatric populations. Hospitalized children - especially neonates - exhibit increased biological vulnerability due to immune system immaturity, prematurity, low birth weight, and frequent exposure to invasive procedures. In the Republic of Moldova, comprehensive epidemiological data on pediatric HAIs remain limited.

**Aim of the study.** To assess the incidence, distribution, and major risk factors of healthcare-associated infections among hospitalized children in the Republic of Moldova.

**Material and methods.** A retrospective descriptive cross-sectional study was conducted in a tertiary pediatric hospital during 2023-2024. Of 1,124 reviewed medical records, 96 were excluded. The final sample comprised 1,028 hospitalized children. Demographic, clinical, and microbiological variables were analyzed, including age, gestational age, birth weight, and type of HAI. The findings presented represent preliminary results of an ongoing study.

**Results.** The overall incidence of HAIs was 6.7%. Neonates accounted for 65% of cases and represented the most affected age group. A markedly higher burden was observed among extremely low birth weight infants: 45% of HAIs occurred in infants weighing <1000 g, compared to 4.2% among those with birth weight >2500 g. Similarly, 53% of infections occurred in infants born at <32 weeks of gestation, versus 21% in those ≥37 weeks. Respiratory tract infections predominated (54.6%), followed by bloodstream infections (19.5%), surgical site infections (13.0%), urinary tract infections (6.5%), and COVID-19-associated infections (2.6%). The microbiological profile was predominantly bacterial. Gram-negative organisms accounted for 61% of isolates, with *Klebsiella pneumoniae* (24%), non-fermentative Gram-negative bacilli (15%), and *Pseudomonas aeruginosa* (11%) being most frequent. Gram-positive microorganisms represented 31%, including *Staphylococcus epidermidis* (14%), *Staphylococcus aureus* (7%), *Enterococcus faecalis* (5%), and *Streptococcus viridans* (5%). Fungi accounted for 3% of isolates, while viruses represented 4%.

**Conclusions.** Pediatric HAIs in the country have an incidence of 6.7%, disproportionately affecting neonates, particularly those who are preterm or have low or extremely low birth weight. Respiratory tract infections remain the most common clinical presentation, while Gram-negative pathogens dominate the etiological profile, reflecting a pattern similar to that observed in resource-limited settings. Implementation of enhanced surveillance and tailored infection control measures is essential to reduce the burden of HAIs in neonatal and pediatric units.

**Keywords:** healthcare-associated infections, neonates, prematurity, low birth weight, Gram-negative bacteria, *Klebsiella pneumoniae*, Republic of Moldova

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## EFFECTS OF CREATINE SUPPLEMENTATION ON MUSCLE STRENGTH AND RECOVERY IN ATHLETES

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**Introduction.** Creatine is a naturally occurring nitrogen-containing organic compound synthesized mainly in the liver, kidneys, and pancreas from the amino acids arginine, glycine, and methionine. It is stored primarily in skeletal muscles as phosphocreatine, which plays a key role in rapid adenosine triphosphate (ATP) regeneration during high-intensity and short-duration physical activity. Creatine supplementation has become one of the most widely used nutritional strategies among athletes to improve physical performance, increase muscle strength, and accelerate recovery.

**Aim of the study.** To investigate the effects of creatine supplementation on muscle strength, recovery, and overall tolerance among physically active individuals.

**Material and methods.** A total of 53 participants aged 20-35 years were included in the study, including three females. All participants were involved in regular sports activities, and four were professional bodybuilders. Participants were surveyed regarding creatine supplementation patterns, dosing strategies, perceived changes in muscle strength, recovery, and possible side effects. Among the participants, 5 individuals (5.6%) did not use creatine. Eighteen participants (38.3%) used a loading phase of 10 g/day for the first 10 days followed by 5 g/day, while 29 participants (61.7%) used a constant dose of 5 g/day without a loading phase.

**Results.** All participants using creatine (100%) reported an increase in muscle strength, although the onset of effects varied. Twenty-two participants (46.8%), including all individuals who completed the loading phase, reported noticeable strength improvements within 6-7 days. Ten participants (21.3%) observed improvements after 10-12 days, while fifteen participants (31.3%) noticed changes after 14-15 days. Regarding muscle recovery, 44 participants (93.6%) reported faster recovery after training, while 3 participants (6.4%) did not observe significant benefits. Two former users discontinued creatine supplementation due to sensations of bloating and occasional renal discomfort, one of whom had a previous history of kidney stone disease. Most participants (92.3%) reported increased water intake, averaging approximately 2.5-3 liters per day.

**Conclusions.** Creatine supplementation appears to be an effective and generally safe strategy for improving muscle strength and recovery in physically active individuals when used at recommended doses. The findings support previous evidence that creatine may enhance training performance without significant adverse effects in healthy individuals.

**Keywords:** creatine supplementation, muscle strength, athletic performance, resistance training, recovery, sports nutrition.

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## PEDIATRIC BURN HOSPITALIZATIONS IN GEORGIA: AN 8-YEAR NATIONAL RETROSPECTIVE STUDY

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**Introduction.** Burn injuries represent a major global public health concern and remain one of the leading causes of injury-related morbidity among children. Pediatric burns result in significant physical, psychological, and economic consequences for affected families and healthcare systems. The burden of burn injuries is particularly high in low- and middle-income countries, where prevention strategies and epidemiological surveillance systems remain limited. In Georgia, comprehensive epidemiological analyses of pediatric burn injuries remain scarce.

**Aim of the study.** The aim of this study was to evaluate the epidemiological characteristics and outcomes of pediatric burn injuries in Georgia.

**Material and methods.** A retrospective observational study was conducted using data from the national electronic hospitalization registry maintained by the National Center for Disease Control and Public Health (NCDC). The study included all hospitalized patients aged 0-17 years diagnosed with burn injuries between 2017 and 2024. Extracted variables included demographic characteristics, burn etiology, injury severity, length of hospital stay, outcome-related variables, and seasonal distribution of injuries. Descriptive statistical methods were used to analyze injury patterns. Seasonal variation in burn incidence was assessed using one-way ANOVA with post-hoc comparisons.

**Results.** A total of 5,268 pediatric burn hospitalizations were identified during the study period. The majority of patients were male (58.4%), and more than half of all cases occurred among children younger than one year of age (51.5%). Thermal burns were the predominant injury mechanism, accounting for 90.9% of cases. Second- and third-degree burns were the most frequently recorded injury types. Nearly half of the patients were discharged within 24 hours of hospitalization, whereas 28.5% required hospital stays longer than seven days. Analysis of seasonal trends revealed statistically significant peaks in burn incidence during December and July, particularly among children aged 0-5 years ( $p < 0.05$ ).

**Conclusions.** This national-level analysis highlights the substantial burden of pediatric burn injuries in Georgia and identifies important demographic and seasonal patterns associated with these injuries. The findings underscore the need for targeted prevention strategies, improved household safety measures, and strengthened injury surveillance systems to reduce the incidence of pediatric burns. Further research incorporating more detailed epidemiological and environmental data may support the development of effective, evidence-based prevention interventions.

**Keywords:** pediatric burns; burn injuries; burn epidemiology; injury prevention; Georgia healthcare system.

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## ULTRASOUND BIOMICROSCOPY IN THE EVALUATION OF CILIOCHOROIDAL EFFUSION AFTER ANTERIOR SEGMENT OCULAR TRAUMA

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**Introduction.** Anterior segment ocular trauma is frequently associated with visual impairment and reduced quality of life. Among posttraumatic complications, ciliochoroidal effusion may remain undetected due to opaque media or normal intraocular pressure values. Ultrasound biomicroscopy provides high-resolution imaging of anterior segment structures and enables accurate diagnosis in complex traumatic cases.

**Aim of the study.** To evaluate the role of ultrasound biomicroscopy in detecting posttraumatic ciliochoroidal effusion and guiding therapeutic management in patients with penetrating anterior segment ocular trauma.

**Material and methods.** Three clinical cases of penetrating anterior segment trauma were analyzed, including two male and one female patient. Postoperative evaluation consisted of comprehensive ophthalmic examination and ultrasound biomicroscopy used to guide management. Patients were monitored clinically and imagistically for one year. Follow-up parameters included intraocular pressure, slit-lamp examination, ultrasonographic assessment of anterior and posterior segment structures, and evolution of visual function.

**Results.** Ultrasound biomicroscopy revealed posttraumatic ciliochoroidal effusion in all patients. In the two male patients, effusion developed approximately one week after surgery and was associated with opaque media and ocular hypotony. In the female patient, effusion was detected within several days postoperatively despite normal intraocular pressure. All patients received adjusted conservative therapy over a one-year period, including cycloplegic agents and parabolbar triamcinolone injections. Follow-up with dynamic treatment adjustment demonstrated progressive resolution of effusion, recovery of visual function, absence of secondary glaucoma, and no need for ongoing ophthalmic treatment at final evaluation. These outcomes allowed staged planning of cataract extraction with intraocular lens implantation.

**Conclusions.** Ultrasound biomicroscopy proved to be a valuable diagnostic and monitoring tool in posttraumatic ciliochoroidal effusion. Its use facilitated appropriate conservative management, favorable anatomical and functional outcomes, and safe planning of subsequent surgical intervention.

**Keywords:** ocular trauma, ultrasound biomicroscopy, anterior segment.

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**EVALUATION OF KNOWLEDGE AND ATTITUDES REGARDING THE ROLE OF NURSES IN PREVENTING VENTILATOR-ASSOCIATED PNEUMONIA (VAP) PİNTEAC Olga, SALARU Virginia**

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**Introduction.** Ventilator-associated pneumonia (VAP) is a common and severe infection associated with healthcare in intensive care units (ICUs), significantly affecting morbidity, mortality, and hospital costs. Preventing this complication largely relies on the competence, attitudes, and adherence to care protocols by healthcare staff, who are crucial in implementing preventive measures and continuously monitoring critically ill patients.

**Aim of the study.** To evaluate the knowledge level and attitudes of nurses regarding their role in preventing ventilator-associated pneumonia.

**Material and methods.** A cross-sectional study was conducted at the Emergency Medicine Institute of the Republic of Moldova from August to October 2025. The study included 102 nurses working in intensive care and anesthesia units. Data were collected via a questionnaire that encompassed socio-demographic information (gender and age), professional experience (total work and ICU experience), specific knowledge (hand hygiene, patient positioning, and suctioning), and attitudes toward infection control protocols. Statistical analysis was performed using Microsoft Excel.

**Results.** The questionnaire was completed by 102 nurses, predominantly female (79.4%), aged 25 to 65. Analysis of work experience revealed that 34.3% had 1 to 5 years of general experience, while 28.4% had over 15 years. Only 12% of respondents were beginners (less than 1 year). A similar distribution was noted in ICU/anesthesia experience: 31.4% had 1 to 5 years, 18.6% had 6 to 10 years, and 23.5% had over 15 years. Most respondents worked shift rotations (92.2%) and provided daily care for ventilated patients. The average number of patients cared for during a shift was 3 (40.6%) or 4 (59.4%). Regarding guidelines, 76.4% followed the national clinical protocol, while approximately two-thirds reported using the institutional protocol. For VAP prevention measures, participants identified oral cavity hygiene (87.3%), elevating the bed at 30-45° (81.4%), hand hygiene (76.5%), and subglottic suctioning (72.5%). The nurse's role in caring for intubated patients was rated as extremely important, with 94.1% giving a maximum score of 5. The health professionals responsible for VAP prevention were primarily postoperative nurses (52.9%), followed by resuscitation physicians (47%), anesthesiologists (30.3%), epidemiologists (16.6%), and surgeons (7.8%).

**Conclusions.** The study concluded that ICU nurses have knowledge and practices aligned with guidelines for preventing ventilator-associated pneumonia, recognizing their crucial role in prevention.

**Keywords:** pneumonia, mechanical ventilation, nurse, prevention.

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## REFRACTIVE LENS EXCHANGE IN HIGH MYOPIA: A THREE-CASE SERIES HIGHLIGHTING MYOPIA AS A NON-COMMUNICABLE DISEASE AND THE ROLE OF SURGICAL STRATEGIES IN VISION HEALTH

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**Introduction.** High myopia is a major refractive disorder with a steadily increasing global prevalence. Patients with high myopia and associated high astigmatism often experience significant visual impairment, which in some cases may be complicated by amblyopia. These visual limitations can negatively affect daily activities, professional performance, and overall quality of life. In addition, highly myopic patients have an increased predisposition to various ocular complications, requiring long-term and regular ophthalmological follow-up. Refractive lens exchange (RLE) has become an effective refractive option in selected patients, particularly when corneal refractive surgery is contraindicated or insufficient to achieve optimal visual outcomes.

**Aim of the study.** To present three clinical cases of patients with high myopia and high astigmatism, some with associated amblyopia, who underwent refractive lens exchange using different intraocular lens strategies, emphasizing the importance of individualized IOL selection.

**Material and methods.** This retrospective case series includes three patients with high myopia and high astigmatism who underwent refractive lens exchange. Based on individual visual demands, professional activity, lifestyle, and expectations, different IOL types were implanted: monofocal, extended depth-of-focus (EDOF), and multifocal intraocular lenses. Preoperative evaluation included comprehensive refractive assessment, visual acuity testing, optical biometry, and detailed retinal examination. Postoperative outcomes were evaluated by uncorrected and corrected visual acuity, refractive stability, and subjective patient satisfaction.

**Results.** All patients demonstrated significant improvement in uncorrected visual acuity, reducing functional impairment associated with high myopia as a non-communicable ocular condition. No intraoperative or postoperative complications were observed. Individualized IOL selection ensured outcomes aligned with patients' visual needs and quality-of-life expectations, highlighting the importance of personalized risk management and patient-centered care within the broader framework of vision health promotion and non-communicable disease management.

**Conclusions.** Refractive lens exchange is a safe and effective option for visual rehabilitation in selected patients with high myopia. An individualized approach to IOL selection, considering refractive characteristics, occupational requirements, and lifestyle, is crucial for optimizing visual outcomes and improving quality of life.

**Keywords:** high myopia, refractive lens exchange, intraocular lens, astigmatism, amblyopia, quality of life.

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## EVALUATION OF PUBLIC KNOWLEDGE, ATTITUDES, AND PREVENTIVE PRACTICES REGARDING HEPATITIS C IN THE REPUBLIC OF MOLDOVA

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**Introduction.** Hepatitis C virus (HCV) infection continues to represent a significant public health challenge due to its frequently asymptomatic course, high risk of chronicity, and potential progression to cirrhosis and hepatocellular carcinoma. Population awareness and preventive behaviors are essential components of national hepatitis control and elimination strategies.

**Aim of the study.** To assess the level of knowledge, attitudes, and preventive practices related to hepatitis C among different professional categories in the Republic of Moldova.

**Material and methods.** A cross-sectional descriptive study was conducted on 567 respondents, including physicians (26.6%), nurses (49.4%), and individuals from other professional or non-professional categories (24.0%). Data were collected using a structured questionnaire covering transmission routes, risk perception, prevention, and health-seeking behavior. Information was processed using Epi Info software. Descriptive statistical analysis was performed.

**Results.** Overall, 80.6% of respondents correctly identified hepatitis C as a transmissible infectious disease. Parenteral transmission was recognized by 88.9% of participants, while 81.0% correctly indicated sexual transmission as possible. However, 18.7% reported incorrect transmission routes, including casual contact. Awareness of the asymptomatic evolution of HCV was reported by 62.4% of respondents. A high proportion (94.3%) considered that invasive medical procedures should involve single-use instruments, and 91.2% supported strict sterilization protocols. Screening willingness was expressed by 76.5% of participants. Comparative analysis showed higher correct response rates among healthcare workers, particularly physicians, in identifying transmission routes (over 95%) and long-term complications (82.1%), whereas non-medical respondents demonstrated lower levels of accurate knowledge (parenteral transmission identified by 71.8%). Despite generally favorable attitudes toward prevention, inconsistencies in understanding risk factors and disease progression were observed across subgroups.

**Conclusions.** The findings indicate a relatively good overall awareness of hepatitis C in the Republic of Moldova, particularly among healthcare professionals. Nevertheless, relevant knowledge gaps persist among non-medical populations, especially regarding transmission mechanisms and asymptomatic progression. Strengthening targeted educational interventions and promoting evidence-based risk communication remain essential to support hepatitis C prevention and elimination efforts.

**Keywords:** hepatitis C, knowledge assessment, preventive practices, public awareness, healthcare workers, Moldova, cross-sectional study.

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## THE IMPACT OF FRACTURES IN OSTEOPOROSIS

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**Introduction.** Osteoporosis is a problem of global importance, clinically asymptomatic, and has been placed by the World Health Organization in the list of diseases related to the aging of the population. Osteoporosis, also known as "brittle bone disease," is a metabolic bone disease characterized by a progressive decrease in bone mineral density and, thus, a decrease in bone strength and hardness. Bones become more fragile, and the risk of pathological fractures increases significantly. Osteoporosis causes over 8.9 million fractures worldwide each year, with a lifetime risk of ~17% for women and 6% for men. The dangerous potential essentially stems from the fact that osteoporotic fractures are not common, but: they can occur after very minor impacts that would not normally cause fractures; hip and spine fractures are associated with an increased risk of disability.

**Aim of the study.** Analysis of etiological factors of fractures in osteoporosis.

**Material and methods.** This study was an observational, analytical, cross-sectional study conducted on 203 respondents diagnosed with osteoporosis. The inclusion criteria are age >18 years, signing of the informed consent form from different regions of the Republic of Moldova, and diagnosis of osteoporosis according to osteodensitometry using the DEXA method, and the exclusion criteria are pregnant women, patients taking glucocorticoids, and patients with autoimmune diseases. Data were collected using a standardized questionnaire with several sections, the third section including questions about fractures. Excel was used for data analysis.

**Results.** Of the total 203 respondents included in the study, 63.5% (129 persons) had not suffered any fractures, 31% (63 persons) had previously suffered 1-2 fractures, 5% (10 persons) reported 3-4 fractures, and 0.5% - only one respondent reported >5 fractures. Analyzing the causes of fractures in the 36.5% (74 respondents) who reported fractures, we determined that: 9.3% of fractures were caused by a strong blow, 16.2% of fractures were caused by a fall from their own height, 8% of fractures were caused by a fall from a height, and 3% of fractures were caused by routine activities. In terms of the areas affected by fractures, we note: 16% fractures of the upper limb, 12% fractures of the lower limb, 5.5% vertebral fractures, and 3% fractures of the rib cage.

**Conclusions.** Of the 203 respondents included in the study, only 36.5% determined the presence of fractures. However, the most common cause of fractures among these 36.5% respondents was reported to be falling from their own height 16.2%. In terms of fracture location, the upper limb stood out with a value of 16% compared to the rest of the areas. This result in the minority, 36.5%, cannot be considered a primary risk factor in the etiology of osteoporosis. Following an accidental fracture, a diagnosis of osteoporosis can be established.

**Keywords:** osteoporosis, fractures, risk factors.

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## **HYPERTENSION IN CHILDREN AND ADOLESCENTS: THE IMPORTANCE OF EVALUATING PHYSICAL AND HEMODYNAMIC PARAMETERS IN PREVENTION**

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**Introduction.** The prevalence of hypertension among children and adolescents is increasing globally, most likely related to rising body mass index (BMI) and obesity. The pooled overall prevalence of high BP and hypertension among European children aged 3-19 years was 8%. Childhood hypertension has been associated with increased blood pressure (BP) levels later in life, as well as with markers of target organ damage. A secular trend towards earlier puberty in girls has been documented, and a similar, but less certain, trend in boys is observed. These shifts are multifactorial, with nutritional status and adiposity strongly influencing pubertal timing via mechanisms including elevated serum leptin levels and neurohormons.

**Aim of the study.** Diagnostic specificity in hypertension in children and adolescents based on BP monitoring and hemodynamic parameters.

**Material and methods.** Estimation of clinical and hemodynamic parameters and management of 52 children and adolescents with hypertension based on the analysis of blood pressure monitor variability. The parameters of age, sex, body mass, systolic (SBP) and diastolic blood pressure (DBP), LV myocardium mass index (LVMMI) and LV myocardial mass, body mass index (BMI), as well as heart cavity diameters, heart volumes, LV ejection fraction, LV shortening fraction, and cardiac remodeling indices were evaluated.

**Results.** The average age in the group was  $14.59 \pm 0.42$  years. The body mass index was  $25.6 \pm 0.6$  ( $p < 0.001$ ). It was found that the specific indices characterizing the remodeling process of the left ventricular myocardium in patients with chronic myocardial dysfunction secondary to arterial hypertension are the increase in the values of SBP  $158.0 \pm 3.2$  mmHg ( $p < 0.001$ ) and DBP  $96.3 \pm 1.35$  mmHg, ( $p < 0.001$ ), the increase in the LV MMI (myocardial mass index)  $82.4 \pm 1.4$  and the LV MM  $187.0 \pm 12.8$  g, ( $p < 0.001$ ), the increase in the diameters of the heart cavities (end-diastolic diameter of the left ventricle EDDL<sub>V</sub>  $51.4 \pm 1.2$  mm, end-systolic diameter of the left ventricle ESDL<sub>V</sub>  $34.9 \pm 0.9$  mm and intracavitary volumes (left ventricular end-diastolic volume LVEDV  $133.4 \pm 7.3$  mL, left ventricular end-systolic volume LVESV  $65.1 \pm 4.5$  ml), the thickening of the IVS  $9.9 \pm 0.4$  mm ( $p < 0.001$ ), the reduction in the global echocardiographic heart function EF  $51.5 \pm 1.4\%$ , as well as LV myocardial hypertrophy, the increase in the HR  $124.2 \pm 4.1$  b/m.

**Conclusions.** In the prevention of hypertension in children and adolescents, the data of our study confirmed the importance of early determination of physiological parameters that indicated overweight, especially in girls, for their estimated age, and isovolumetric hemodynamics and blood pressure levels to identify cardiovascular risk factors and their medical monitoring.

**Keywords:** hypertension, children and adolescents, prevention, hemodynamic parameters.

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## EVALUATION OF CONGESTIVE HEART FAILURE IN ADOLESCENTS OF MYOCARDITIS – IMPORTANT FACTOR IN THE PREVENTION OF SUDDEN DEATH

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**Introduction.** Pediatric heart failure (HF) is a complex clinical syndrome with diverse etiologies and presentations. Pediatric HF differs from adult HF, mainly due to the variety of etiologies classified into three main categories: heart failure due to cardiomyopathy and myocarditis, heart failure due to CHD with biventricular or univentricular physiology, and heart failure from acquired heart disease.

**Aim of the study.** Evaluation of congestive heart failure depending on treatment, based on clinical, instrumental, and laboratory examinations in adolescents with myocarditis and identification of potential predictors of sudden death.

**Material and methods.** An applied study was conducted using quantitative data collection methodology based on statistical analyses, cross-sectional, and retrospective with the estimation of hemodynamic indices of 63 patients with an average age of  $16.2 \pm 0.3$  years with acute myocarditis based on a unique protocol. Research methods used: clinical with assessment of the functional class of heart failure, ECG, EchoCG, and chest X-ray. Identification of plasma levels of B-type natriuretic peptide (BNP) and N-terminal pro-B-type natriuretic peptide (NT-proBNP) has been performed mainly by automated immunological methods. The "Statistical Package for the Social Sciences" software was used by variational, descriptive analysis methods, the Student t-test was used. Inclusion criteria were newly diagnosed HF with reduced or preserved ejection fraction, NYHA class III and recent hospitalisation (each endorsed by  $>72\%$  of respondents).

**Results.** Physical examination: dyspnea was revealed in 68.3%, pulmonary crepitations – 62.4%, hepatomegaly in 18.6%, peripheral edema – 28.2%, and tachycardia ( $>150/\text{min}$ ) in 62.4% of cases. Chest radiography revealed signs of pulmonary stasis in 34.2% and an increased cardiothoracic index in 68.4% of cases. ECG revealed left ventricular (LV) hypertrophy, ST-T changes (92.5%), tachycardia (61.5%), conduction blocks – 10.2% of cases. Echocardiography found cardiac chamber dilation (62.4%), systolic dysfunction,  $\text{EF} < 50\%$  in 32.8%, and diastolic dysfunction in 48.6% of cases. Increased plasma levels of BNP and NT-proBNP showed increased values in 68.2% and 57.6% of cases. Long-term therapy included ACE inhibitors (enalapril 0.1 mg/kg) and mineralocorticoid receptor antagonists (spironolactone 1 mg/kg). In dynamics, a significant improvement in hemodynamic indices and clinical symptoms was observed.

**Conclusions.** Predictors of sudden death identified in this study were: myocardial remodeling associated with prevalent diastolic dysfunction, arrhythmias, LV hypertrophy and ST-T segment changes, and elevated serum BNP and NT-proBNP levels, which confirmed the diagnosis, management, and prognosis of heart failure. The use of ACE inhibitors and mineralocorticoid receptor antagonists was effective in preventing cardiovascular risk.

**Keywords:** heart failure, adolescents, myocarditis, diagnosis, cardiovascular risk.

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## ANTIMICROBIAL RESISTANCE OF GRAM-NEGATIVE BACILLI ISOLATED FROM CLINICAL BIOSUBSTRATES TRAISTA Doina<sup>1</sup>, ANTON Maria<sup>2</sup>, BALAN Greta<sup>1</sup>

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**Introduction.** Antimicrobial resistance represents one of the most significant challenges of modern medicine, reducing treatment effectiveness and increasing the risk of complications and mortality. Gram-negative bacilli are frequently involved in both nosocomial and community-acquired infections, exhibiting a high capacity to develop complex resistance mechanisms.

**Aim of the study.** To evaluate antimicrobial resistance in Gram-negative bacilli isolated from clinical samples in order to optimize therapeutic strategies and improve infection control.

**Material and methods.** A retrospective study was conducted between January 2024 and December 2025. Gram-negative bacilli were isolated using selective culture media. Bacterial identification was performed using automated methods with the Vitek® 2 Compact system. Antimicrobial susceptibility testing was carried out using both the Vitek® 2 Compact system and the Kirby–Bauer disk diffusion method. The interpretation of susceptibility results was performed in accordance with the European Committee on Antimicrobial Susceptibility Testing guidelines.

**Results.** Clinical isolates of *Escherichia coli* showed high resistance to fluoroquinolones, identified in 680 isolates (74.4%), followed by resistance to cephalosporins in 576 isolates (63.0%) and to penicillins in 570 isolates (62.4%). Lower resistance rates were recorded for colistin (29 isolates; 3.2%) and carbapenems (81 isolates; 8.9%), while moderate resistance was observed for aminoglycosides (404 isolates; 44.2%). *Klebsiella pneumoniae* demonstrated markedly higher resistance levels, particularly to cephalosporins (1077 isolates; 97.0%), followed by fluoroquinolones (1070 isolates; 96.4%), penicillins (1013 isolates; 91.3%), and aminoglycosides (979 isolates; 88.2%). Although lower, resistance to carbapenems remained alarmingly high (627 isolates; 56.5%), while resistance to colistin was observed in 240 isolates (21.6%). *Pseudomonas aeruginosa* isolates exhibited the highest resistance to cephalosporins (150 isolates; 74.6%), followed closely by penicillins (148 isolates; 73.6%), fluoroquinolones (145 isolates; 72.1%), carbapenems (144 isolates; 71.6%), and aminoglycosides (141 isolates; 70.1%). A lower level of resistance was observed for colistin, detected in 23 isolates (11.4%). In *Acinetobacter baumannii* isolates, high levels of resistance were recorded across all tested antimicrobial classes, with the exception of colistin. Resistance to fluoroquinolones was observed in 448 isolates (99.5%), to carbapenems in 420 isolates (93.3%), and to aminoglycosides in 415 isolates (92.2%). In contrast, resistance to colistin remained comparatively low, identified in 51 isolates (11.3%).

**Conclusions.** The study reveals a high burden of antimicrobial resistance among Gram-negative bacilli, with pronounced multidrug resistance in *Klebsiella pneumoniae* and *Acinetobacter baumannii*, including resistance to carbapenems. *Pseudomonas aeruginosa* also showed consistently elevated resistance levels, while *Escherichia coli* remained highly resistant to commonly used agents. Although colistin largely retains activity, emerging resistance is concerning, highlighting the need for ongoing surveillance and optimized antimicrobial stewardship.

**Keywords:** antimicrobial resistance, Gram-negative bacilli, clinical biosubstrates.

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## ANTIMICROBIAL POTENTIAL OF SEA BUCKTHORN GROWN IN THE REPUBLIC OF MOLDOVA

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**Introduction.** In recent years, growing attention has been given to the cultivation of sea buckthorn (*Hippophaë rhamnoides* L.) in the Republic of Moldova, with the aim of harnessing its potential across multiple sectors. Both the berries and leaves are rich in biologically active compounds, contributing to their significant health-promoting properties. Currently, there is considerable interest in the use of berries as therapeutic agents, primarily due to their high polyphenol content, which supports their role as natural antioxidants and nutraceutical supplements with antimicrobial, anticancer, antiallergic, and other beneficial effects. The antioxidant and antimicrobial capacity of these berries is largely influenced by their chemical composition.

**Aim of the study.** The aim of this study was to evaluate the antimicrobial potential of sea buckthorn cultivated in the Republic of Moldova by assessing the activity of its extracts against selected microbial strains.

**Material and methods.** Fully ripened berries of sea buckthorn were to pick up, frozen at  $-25^{\circ}\text{C}$ , and analyzed after 6 months of storage. Antimicrobial activity was assessed using the agar well diffusion method, by measuring inhibition zones produced by different berry fractions. The test microorganisms included *Staphylococcus aureus* ATCC 25923, *Bacillus subtilis* ATCC 6633, *Listeria monocytogenes* ATCC 19118, *Salmonella* Typhimurium ATCC 14028, *Escherichia coli* ATCC 25922, and *Candida albicans* ATCC 10231. All experiments were done in triplicate.

**Results.** Sea buckthorn exhibited a pronounced antimicrobial effect, with the highest inhibitory activity recorded against *Listeria monocytogenes* ( $32.4 \pm 0.3$  mm). A strong effect was also observed against *Staphylococcus aureus* ( $29.2 \pm 0.5$  mm) and *Bacillus subtilis* ( $28.2 \pm 0.3$  mm), demonstrating strong susceptibility of Gram-positive organisms. In contrast, a moderate inhibitory effect was noted for Gram-negative bacteria, like *Salmonella* Typhimurium ( $18.2 \pm 0.3$  mm) and *Escherichia coli* ( $18.2 \pm 0.4$  mm). No antimicrobial activity was detected against *Candida albicans*, suggesting resistance of this fungal strain to sea buckthorn. The observed antimicrobial effects of sea buckthorn can be attributed to its rich content of biologically active compounds, including polyphenols, flavonoids, vitamins (especially C and E), and organic acids. These substances are known to disrupt microbial cell walls, inhibit enzyme activity, and interfere with microbial metabolism, which explains the strong inhibition of Gram-positive bacteria and the moderate effect on Gram-negative strains.

**Conclusions.** The results obtained in this study suggest that sea buckthorn products cultivated in the Republic of Moldova possess antimicrobial activity, which gives them the potential to be used as natural food preservatives, supporting the reduction of synthetic additives.

**Keywords:** *Hippophae rhamnoides* L., antimicrobial activity, food safety.

**Acknowledgments:** This work was supported by a grant of the Ministry of Education and Research, CCDI-UEFISCDI, project number PN-IV-PCB-ROMD-2024-0135, within PNCDI IV and NARD, 25.80013.5107.29ROMD.

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## ISOLATION AND CHARACTERIZATION OF BACTERIOPHAGES FROM WASTEWATER

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**Introduction.** The rapid increase of multidrug-resistant *Escherichia coli* strains represents a major public health concern, as the effectiveness of conventional antibiotics continues to decline. An increased research interest is shown for lytic bacteriophages, a promising alternative to antimicrobials due to their ability to selectively target and destroy MDR bacteria. Recent studies have demonstrated that phages can efficiently lyse clinical and environmental MDR *E. coli* isolates, offering a viable tool for both therapeutic and biocontrol applications. Therefore, the isolation and selection of active bacteriophages against MDR *E. coli* is a timely and necessary direction, complementary to developing new antimicrobial active compounds and addressing the growing threat of antibiotic resistance.

**Aim of the study.** To isolate and characterize bacteriophages from wastewater, evaluating their lytic activity, host range, and stability against multidrug-resistant *Escherichia coli* strains.

**Material and methods.** Wastewater samples were collected from municipal sewage and filtered through 0.45 µm membranes to remove debris and bacteria. The filtered samples were enriched with multidrug-resistant *E. coli* strains and incubated at 37°C for 12-24 hours to ensure bacteriophage replication. Phages were then isolated using the double-layer agar method, and well-defined plaques were purified through repeated plaque assays. The lytic activity and host range of the purified phages were evaluated against a panel of MDR *E. coli* isolates, and their stability was tested under different pH and temperature conditions.

**Results.** Several lytic bacteriophages were successfully isolated from wastewater samples. The purified phages produced clear, well-defined plaques on the host *E. coli* lawns, indicating strong lytic activity. Host range testing showed that some phages were able to lyse a high proportion of multidrug-resistant *E. coli* isolates, with lytic activity observed in 86% of tested strains. Stability assays demonstrated that the selected phages maintained their lytic activity across a broad range of pH values (pH 3-10) and temperatures (4-60 °C), suggesting their potential suitability for further therapeutic or environmental applications.

**Conclusions.** The study successfully isolated and characterized lytic bacteriophages from wastewater, capable of targeting multidrug-resistant *Escherichia coli* strains. The phages demonstrated strong lytic activity, a broad host range, and stability under varying pH and temperature conditions. These findings highlight the potential of wastewater-derived bacteriophages as alternative antimicrobial agents for controlling MDR *E. coli*. Further research is required to explore their application in therapeutics and environmental biocontrol strategies.

**Keywords:** *Escherichia coli*, bacteriophages, wastewater, isolation.

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