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Launching the South Eastern European Journal of Public Health

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It is my pleasure to announce the start of a new public health journal, the South Eastern European Journal of Public Health (SEEJPH), published by Jacobs Company in Germany and managed by the executive editor Dr. Genc Burazeri MPH, PhD, Tirana Medical University and Maastricht University. The journal will start with two editions per year in 2014 and builds on the success of the Forum for Public Health funded by the German Stability Pact over the first decade of this Century. It also builds on the very impressive last editions of the Albanian Medical Journal in 2012-2013.

The forthcoming South Eastern European Journal of Public Health (SEEJPH) is an open-access, international peer-reviewed journal involving all areas of health sciences. The main focus of the journal, however, is on public health. In addition, this journal encourages submissions from scientists and researcher pertinent particularly to Eastern European countries. From this perspective, the aim of SEEJPH is to offer a means for publication to researchers from the transitional former communist countries of Europe in order promote their scientific work and increase their scientific visibility in Europe and beyond.

Despite their socio-economic and cultural diversity, most of the countries in South Eastern Europe face similar public health challenges. Therefore, public health professionals in South Eastern European region, already for more than a decade, are dedicated to intensively share knowledge, experience and good practice in public health education and research. The sustainability of such cooperation is ensured by willingness and commitment to continue and enlarge the collaboration. The new journal will be one more opportunity for development, implementation and evaluation of joint and country specific activities in public health.

I wish this endeavour full success and assure the editors my full support!

Prof. Vesna Bjegović-Mikanović
ASPHER President Elect (2014-2015)

Burden of non-communicable diseases and strategies for prevention and control

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During the International Public Health (PH) Conference in Tirana, 6-7 May, 2013, I was invited by the editors-in-chief to write an editorial for the next issue of the Albanian Medical Journal (AMJ). As a member of the AMJ Editorial Board and a member of the Forum for PH cooperation in South Eastern Europe (FPH-SEE) Network and an active contributor to the most of activities of the Stability Pact PH-SEE Project from November 2000, when the project officially started, I accepted the invitation with pleasure and honor.

I read the editorials of the first two issues of AMJ in 2013, written by two worldwide PH coryphaei and leading coordinators and key contributors to the revolutionary PH development in SEE region in the past 15 years, Prof. Dr. Ulrich Laaser and Prof. Dr. Theodore Tulchinsky (1,2). Besides their overview to the past activities and successes in the PH capacity building in Albania and other SEE countries, and a vision for the future directions of PH action, both of them emphasized the key threats to human life and well-being, the highest priority and the biggest challenge for PH professionals, health systems and health policies in the SEE countries - the burden of non-communicable diseases (NCDs) and the need for efficient prevention and control. Their vision is a lighthouse for further navigation of the comprehensive public health policies, strategies and practices towards more efficient NCDs prevention and control with an integrated preventive/curative approach to be

implemented at the frontline of primary health care (PHC), embedded in the community.

The aim of this editorial is to present briefly the burden of NCDs and the comprehensive approach with a focus on two basic strategies for prevention and control of NCDs: wide population strategy and strategy for high-risk individuals (3).

Burden of Disease

NCDs, especially cardiovascular diseases, cancers, diabetes and chronic respiratory diseases are the biggest threats to health globally. Their impact undermines social and economic development at the community, national and global levels. NCDs are the leading global killers today in high and in mid-level income countries, and increasingly in low-income countries as well. Out of all 36 million deaths in 2008 worldwide, 63% were caused by NCDs. This group of diseases strikes hardest at the world's low- and middle-income populations in which nearly 80% of deaths are caused by NCDs. The proportion of global deaths due to non-communicable disease is projected to rise from 59% in 2002 and 63% in 2008 to 69% in 2030 (4-11). The consequences for societies and economies are devastating everywhere, but most especially so in poor, vulnerable and disadvantaged populations. These people get sicker sooner and die earlier than their counterparts in wealthier societies. Most of this care is covered through out-of-pocket payments,

leading to catastrophic medical expenditures. For all these reasons, NCDs, especially heart disease, stroke, cancer and diabetes, cause billions of dollars in losses of national income, and they push millions of people below the poverty line, each and every year. The costs to health-care systems from NCDs are high and projected to increase (6,7,10). Significant costs to individuals, families, businesses, governments and health systems add up to major macroeconomic impacts. Economic analysis suggests that each 10% rise in NCDs is associated with 0.5% lower rates of annual economic growth (12). The socioeconomic impacts of NCDs are affecting the progress towards the UN Millennium Development Goals (13).

At the Tirana PH Conference on NCDs, a number of experts presented abundant data about high, and increasing morbidity, mortality and overall consequences of NCDs in Albania, Macedonia and other countries in the SEE Region in the past decade. Roshi et al. stressed that 89% of the overall mortality in Albania in 2008 was accounted for by the NCDs, with cardio)-vascular diseases (59%) and cancer (18%) among the leading causes of death (14). Similar data on mortality and the overall burden of disease from NCDs were presented by Pollozhani et al. for the Republic of Macedonia (15), and Berisha et al. for Kosovo (16).

The *Global Status Report on Non-communicable Diseases* is the first worldwide report on the state of NCDs and ways to map the epidemic, reduce its major risk factors and strengthen health care for people who already suffer from NCDs with disease management involving both public health and direct clinical care in a shared set of responsibilities with the patients, their families, the health system and society at large (10).

Risk factors

Epidemiologic studies have identified key *risk factors* and potential interventions to reduce them. A large percentage of NCDs are preventable through the reduction of their four main behavioral risk factors: tobacco use, physical inactivity (sedentary lifestyle), harmful use of alcohol and unhealthy diet (low fruit and vegetable intake and high salt, fat and sugar consumption), as well as some other underlying metabolic/physiological causes such as: raised blood pressure, overweight and obesity, raised cholesterol and some cancer-associated infections (8-10,17-23).

Surveillance

Current capacities for NCD surveillance are inadequate in many countries. Improving country-level surveillance and monitoring must be a top priority in the fight against NCDs. Three essential components of NCD surveillance constitute a framework that all countries should establish and strengthen. These components include: a) *monitoring exposures* (risk factors and determinants); b) *monitoring outcomes* (morbidity and disease-specific mortality); and c) *health system responses* (interventions and capacity), which also include national capacity to prevent NCDs in terms of policies and plans, infrastructure, human resources and access to essential health care including medicines. Sustainable NCD surveillance systems need to be integrated into national health information systems and supported with adequate resources (9,10).

Strategies

The majority of NCDs can be averted through policies and interventions that reduce major risk factors. There are many options for addressing NCDs through both population-wide interventions, largely aimed at prevention, and through individual interventions aimed at early detection and timely treatments that can reduce progression to severe and costly illness and complications. Many preventive measures for NCDs on a population-wide basis are cost-effective and achievable, even for low-income countries. Some preventive actions can have a quick impact on the burden of disease at the population level. Lifestyle-related behaviors are targeted together with metabolic and physiological risk factors, including high blood pressure, raised serum cholesterol, and impaired glucose metabolism (3,10).

Population strategy is aimed at reducing the level of risk factors 'in all individuals in the general population' through health policy for creating conducive environment that enables adoption of healthy lifestyles and appropriate legislation, taxation and financial incentives from the government, as well as health promotion programs and PH inter-sectoral approach. Although the effect is small at individual level, the strategy has a 'large impact on population level', in particular it does not require behavioral changes and can give quick effects. Such strategies are often very cost-effective and can even generate profit. It offers achieving 'good for all' (3,23). While

many interventions may be cost-effective, some are considered 'best buys' – actions that should be undertaken immediately to produce accelerated

results in terms of lives saved, diseases prevented and heavy costs avoided (Box 1).

Box 1. Preventive NCDs interventions considered 'best buys' (10)
<ul style="list-style-type: none"> • Protecting people from tobacco smoke and banning smoking in public places; • Warning about the dangers of tobacco use; • Enforcing bans on tobacco advertising, promotion and sponsorship; • Raising taxes on tobacco and higher price of cigarettes; • Restricting access to retailed alcohol; • Enforcing bans on alcohol advertising; • Raising taxes on alcohol; • Reduce salt intake and salt content of food; • Replacing trans-fat in food with polyunsaturated fat; • Promoting public awareness about diet and physical activity, including through mass media.
<p><i>Other cost-effective and low-cost population-wide interventions that can reduce risk factors for NCDs:</i></p> <ul style="list-style-type: none"> • Nicotine dependence treatment; • Promoting adequate breastfeeding and complementary feeding; • Enforcing drink-driving laws; • Restrictions on marketing of foods and beverages high in salt, fats and sugar, especially to children; • Food taxes and subsidies to promote healthy diets.
<p><i>Additional interventions in support to prevention of NCDs:</i></p> <ul style="list-style-type: none"> • Healthy nutrition environments in schools; • Nutrition information and counseling in health care; • National physical activity guidelines; • School-based physical activity programs for children; • Workplace programs for physical activity and healthy diets; • Community programs for physical activity and healthy diets (Healthy cities and environments supportive to health, food processing improvement with low salt, trans fats, sugar, increasing availability of healthy foods with low price, promotion of healthy food choices); • Designing the built environment to promote physical activity (promotion of walking/ cycling, sidewalks, pedestrian zones, automobile use limitations, incentives for use of bus).

Some population-wide interventions are recommended to focus on cancer prevention i.e. vaccination against Hepatitis B, a major cause of liver cancer, vaccination against human papillomavirus (HPV), the main cause of cervical cancer. Protection against environmental or occupational risk factors for cancer, such as aflatoxin, asbestos and contaminants in drinking-water can be included in effective prevention strategies. Initiatives at the local community level are the most efficient when multifaceted, with community involvement, and the intensity and duration to be sufficiently good and large enough (3,9,10).

Strategy for high-risk individuals, with interventions for individuals undertaken by the country health-care systems, is aimed at 'detection and treatment of high-risk individuals', who either already have NCDs or who are at high risk of developing them, through screening and treatment before complications occur. Such interventions can be cost-effective, or low in cost. Such strategy offers achieving large effects in a few people, but has 'little impact on population level'. It requires behavioral changes at the individual level, cooperation and personal responsibility - to make healthy choices available. Often, the costs are high (drugs for years for many patients), and it is possible to achieve 'good

for some' (3,23). There are many cost-effective and 'best buys' (high impact, very cost-effective, affordable and feasible) interventions to proactively detect and effectively treat individuals with NCDs, and protect those who are at high risk of developing them. Financing and strengthening health systems to deliver the prioritized package of 'best buys' interventions that are essential for preventing the progression of NCDs through a PHC approach is a pragmatic first step to achieve the long-term vision of universal coverage (9,10,23).

The long-term nature of many NCDs demands a

comprehensive health-system response through prioritizing PHC cost effective preventive and proactive screening and timely treatment approach instead of focusing on hospital-centered acute care, when cardiovascular disease, cancer, diabetes and chronic respiratory disease have reached the point of acute events or long-term complications. The second one is still dominant and a very expensive approach in developing countries which does not contribute to a significant reduction of the NCD burden (9,10). Likewise population-wide interventions, there are also "best buys" and other cost-effective approaches in individual health-care interventions (Box 2).

Box 2. 'Best buys' and other cost-effective interventions in the strategy for high risk individuals (10)

- Counseling and multidrug therapy, including glycaemic control for diabetes for people ≥ 30 years old with a 10-year risk of fatal or nonfatal cardiovascular events $\geq 30\%$;
- Aspirin therapy for acute myocardial infarction;
- Screening for cervical cancer, once, at age 40, followed by removal of any discovered cancerous lesion;
- Early detection of breast cancer through biennial mammographic screening (50–70 years) and treatment of all stages;
- Early detection of colorectal and oral cancer;
- Treatment of persistent asthma with inhaled corticosteroids and beta-2 antagonists.

When cost-effective health-care interventions for detection and treatment of high-risk individuals are complemented with population-wide prevention strategies, it may save millions of lives and considerably reduce human suffering from NCDs. Implementation of the strategies needs to be followed with an appropriate action plan for monitoring and communication of the effects with the population. The delivery of effective NCD interventions is largely determined by the capacity of health-care systems. Gaps in the provision of essential services for screening and early treatment of NCDs often result in high rates of complications such as heart attacks, strokes, renal disease, blindness, peripheral vascular diseases, amputations, and the late presentation of cancers. This can also mean catastrophic spending on health care and impoverishment for low-income families. Strengthening political commitment and giving a higher priority to NCD programs are key to expanding health system capacity for tackling the NCDs.

Improvements in country capacities are particularly needed in the areas of funding, health information, health workforce, basic technologies, essential medicines, and multi-sectoral partnerships (3,10,24-26).

Health policy

Countries need to address NCDs in terms of policies, strategies and action plans, infrastructure, surveillance and population-wide and individual interventions. All stakeholders should be included: policy-makers, health officials, non-governmental organizations, academia, relevant non-health sectors, development agencies and civil society. Integrated programs for prevention of NCDs directed to lifestyle changes, scientific work with monitoring and evaluation, creating supportive environments, multi-sectoral approach in solving health problems and inter-sectoral cooperation within the community with active involvement and participation of the population and developing personal skills are summarizing all principles of organization,

integration and overall activities of health care services within the contemporary health care systems (10,23,26).

The 2008-2013 Action Plan (9) was developed by WHO and Member States to translate the Global Strategy for the Prevention and Control of NCDs (8) into concrete action. The Plan highlighted six key objectives (Box 3).

Conclusion

Despite abundant evidence on the NCD epidemic and burden of disease, which are to a great extent preventable, some policy-makers still fail to regard NCDs as a national health priority. Misunderstandings such as 'NCDs afflict mainly the wealthy' and misconceptions linked to harmful individual lifestyle behaviors and issues of 'blaming the victim' continue to impede effective actions. On the other hand, the influence of socioeconomic

circumstances on risk and vulnerability to NCDs and the impact of health-damaging policies are often underestimated by some policymakers, especially in non-health sectors, who may not fully appreciate the essential influence of public policies related to tobacco, nutrition, physical inactivity and the harmful use of alcohol on reducing behaviors and risk factors that lead to NCDs. Overcoming such misconceptions and viewpoints involves changing the way policymakers perceive NCDs and their risk factors, and how they subsequently act. Concrete and sustained action with a comprehensive approach and multi-sectoral action, including civil society and the private sector, is essential, to prevent exposure to NCD risk factors, address social determinants of disease and strengthen health systems for surveillance, screening and to provide appropriate and timely treatment and care for those with established disease.

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Knowledge, attitudes and practices related to HIV among health workers in the Federation of Bosnia and Herzegovina

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Abstract

Aim: Federation of Bosnia and Herzegovina has a low prevalence of HIV, less than 1% of the total population. Until November 2011, Federation of Bosnia and Herzegovina had registered 117 persons living with HIV, of which 71 developed AIDS. The aims of this study were to assess training of health workers in HIV/AIDS, prevention measures in the workplace, knowledge, attitudes and practices about HIV with an emphasis on HIV stigma and discrimination.

Methods: This study involved 1118 health professionals in public and private health sector in the Federation of Bosnia and Herzegovina. An anonymous survey with a structured questionnaire was conducted for the purposes of research applied to the stratified cluster sampling in 4 levels.

Results: Results of the survey show that 47.8% (533/1115) of health care professionals appeared to be providing health care to persons living with HIV. Health care workers are certain that HIV is transmitted through blood, sperm and other body fluids containing blood, but not so through other body fluids (saliva, sweat and tears). Only 40.4% of health workers knew that all pregnant women who are HIV-infected will not give birth to babies with AIDS. In the past 12 months of working with patients, 29.3% of health workers had needle-stick injury.

Conclusion: This survey has shown that the health workers' knowledge on the ways of HIV transmission and general issues pertaining to HIV, as well as knowledge and application of safety measures is not satisfactory. These results are reflected in attitudes toward persons living with HIV.

Keywords: AIDS, Federation of Bosnia and Herzegovina, health workers, HIV.

Introduction

The Federation of Bosnia and Herzegovina is one of the two entities of the country Bosnia and Herzegovina. The other entity is Republic of Srpska, and there is also Brčko District, self-governing administrative unit. Approximately, 2,338,625 people were living in the 10 Cantons of Federation of Bosnia and Herzegovina at the time of the survey. Federation of Bosnia and Herzegovina has a low prevalence of HIV, less than 1% of the total population. Until November 2011, there were 117 people living with HIV registered in Federation of Bosnia and Herzegovina, of which 71 people developed AIDS (in Bosnia and Herzegovina 196 persons with HIV, 116 with AIDS). Among persons infected, dominate males (81%). Heterosexual intercourse is the most common mode of transmission (56%), followed by homosexual/ bisexual intercourse (25%), and injection drug use (13%).

In the past 30 years, scientists have achieved amazing success, first in the rapid identification of HIV and development of diagnostic tests, then in matters of transmission, prevention and treatment. However, in 1987 Jonathan Mann, director of the AIDS program of the World Health Organization, identified stigma and discrimination as the third phase of HIV/ AIDS epidemic (after AIDS and HIV epidemic). Despite many international efforts, stigma and discrimination remain the most poorly understood aspect of the epidemic (1).

With the advent of HIV epidemic in the world there appears a growing concern among health workers over a possibility of infection in their daily work. Healthcare personnel are at risk of occupational exposure to blood-borne pathogens, including hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). Exposures occur through needle-sticks or cuts from other sharp instruments contaminated with an infected patient's blood. Following a specific exposure, the risk of infection may vary due to factors such as these: pathogen involved type of exposure, amount of blood involved in the exposure, amount of virus in the patient's blood at the time of exposure, etc. (2). There are numerous causes of stigma and discrimination in health facilities including lack of knowledge among health care workers about the modes and the risks of HIV transmission, and

judgmental attitudes and assumptions about the sex lives of people living with HIV (3,4). Health workers are members of the community in which they work their views reflect the prevailing stigma that exists in the community, especially toward the marginalized groups, such as sex workers (5).

Methods

Study population and sampling

In Federation of Bosnia and Herzegovina survey we obtained a representative sample of health workers. The pattern is formed on the basis of data on the number of employees in public and private health institutions in the Federation of Bosnia and Herzegovina. For the total number of employees in public health institutions in the Federation of Bosnia and Herzegovina, we used data from the Health-statistics annual of the Federation of Bosnia and Herzegovina for 2009, which is prepared and published by the Institute for Public Health of Federation of Bosnia and Herzegovina, while the data on employees in the private health care institutions were obtained from professional chambers/ associations of the Federation of Bosnia and Herzegovina. For the purposes of research we applied stratified cluster sampling, in 4 levels:

Level I - determination of 4 strata of health facilities (health centers, general hospitals, the Institute for Transfusion and Clinical Center), Level II - 5 strata of health professionals (medical doctors, dental doctors, medical technicians, laboratory technicians and dental technicians), Level III- the choice of subjects or clusters depending on the number of health facilities, and Level IV – random health workers encountered during the investigation, until the required number. Strata were determined by the regional distribution of health facilities, which provided geographical coverage of the entire territory of the Federation of Bosnia and Herzegovina.

Survey questionnaire

54-item questionnaire specifically made for the purpose of this study, based on similar studies in the region and the world, was used as a research instrument. The questionnaire was adapted to the situation and needs of the Federation of Bosnia and Herzegovina. The questionnaire contains questions

covering the following areas: training of health workers; prevention measures in the workplace, knowledge, attitudes and practices about HIV with an emphasis on HIV stigma and discrimination, as well as the general socio-demographic characteristics of respondents. In the questionnaire, particular attention was given to issues related to attitudes and beliefs of health professionals about persons living with HIV as well as the basis of any stigmatizing behaviour of health workers towards such persons. Attitudes and beliefs were assessed by provided responses of “agree”, “not sure” and “disagree”. To test the applicability of the questionnaire and to avoid ambiguities, as well as to assess the time needed to complete the questionnaire, the questionnaire was tested in a medical institution.

Fieldwork

The study lasted three months, with fieldwork covering a period of one month. The Institute of Public Health of the Federation of Bosnia and Herzegovina conducted the study. Coordinators for fieldwork and survey's administrators were appointed persons from the Cantonal PHIs in Federation of Bosnia and Herzegovina. The fieldwork was carried out in the second half of June and first week of July. The survey field administrators were employees of institutions responsible for conducting research who had previous experience in this type of work. Fieldwork was realized with assistance from employees of Cantonal PHI, who were in charge of taking the questionnaires from the survey's administrators organize the survey (distribution of questionnaires to health workers in health institutions and collecting completed-questionnaires). Participation of health workers in the survey was voluntary. The questionnaire was self-administered and returned sealed in an unmarked envelope. Before the research began, assistants and administrators of research attended one-day training

program for research. During the fieldwork the research team carried out supervision of implemented activities.

Statistical analysis

For a description of the sample, demographic and working characteristics of respondents, the level of health care and category of health workers, personal contact with PLWHA and education in the field of HIV/ AIDS we calculated: the frequency and percentages, mean and standard deviation and 95% confidence intervals.

The significance of differences between sub-samples, or different categories of respondents, is calculated using student's t-test and analysis of variance (ANOVA) with post-hoc Tukey's test, when it comes to variables measured at the interval level, or by using Pearson's chi-square test when it comes to nominal variables. Statistical significance was defined as $P < 0.05$. Analyses were done using the specific procedures for complex patterns in the statistical package SPSS 17 (SPSS, Inc., 2007, Chicago, IL, USA).

Results

Characteristics of respondents

A total of 1118 health professionals participated in the survey. Majority of health care workers (997 or 89.3%) works in public health facilities, and the response rate was 90.4%. Most of the respondents were female (76.4%). Half of the samples were medical nurses, 21, 1% was medical doctors-specialists. At the primary level of health care, works 41.8% of health workers, at secondary level 30%, and the lowest percentage of health workers in the sample belongs to tertiary level of care (Table 1). Most respondents reported having some education on HIV/ AIDS. 66% of health professionals considered that the knowledge gained during the training was useful 3.2% said that it was partially useful and 24.9% responded that it wasn't useful.

Table 1. Characteristics of respondents

	Category	Percent (Number)
Gender (n=1112)	Male	23,6 (262)
	Female	76,4 (850)
Mean age (n=1097)		42,3±10,2
Profession (n=1118)	Medical doctor-specialist	21,1 (236)
	Medical doctor-general practice	4,7 (53)
	Doctor of stomatology	5,5 (62)
	Medical nurse (with 4 additional years)	7,2 (81)
	Medical nurse (with 3 or without add. years)	48,2 (539)
	Dental nurse	5,5 (61)
	Lab. nurse	7,7 (86)
Years of working experience Mean (range) (n=1087)	≤ 10	35 (380)
	11 – 20	30,3 (329)
	21 - 30	24,4 (265)
	≥ 31	10,4 (113)
Level of Health Care (n=1118)	Primary	41,8 (467)
	Secondary	30 (335)
	Tertiary	28,3 (316)
Type of ownership of health facilities (n=1112)	Public	89,3 (993)
	Private	10,7 (119)
Training on HIV/AIDS (n=1075)	Yes	71,2 (765)
	No	28,8 (310)

Knowledge of health workers on modes of HIV transmission and general knowledge of health workers about HIV/AIDS

The highest percentage of correct answers was given to the question: HIV is transmitted through blood - 99.1%, with seminal fluid - 90.6%, and 89.2% through other body fluids containing blood (Table 2).

Average of correct answers on the modes of transmission of HIV in healthcare workers indicates the following: medical doctors – specialists (mean 5.67) know significantly more than nurses/ technicians and dental nurses/ technicians and laboratory technicians. Doctors of medicine-general practitioners (mean 6.23) know significantly more than nurses/ technicians, dental nurses/ technicians and laboratory technicians. Graduate nurses/ technicians (mean 5.74) know considerably more than dental nurses/technicians (F=6.577, P<0.001). The most accurate answer about HIV transmission was provided by health workers employed in the

secondary health care level. The difference in knowledge was statistically significant in relation to health workers of primary health care level (F=5.608, P=0.004).

That people cannot get HIV by the mosquito bite, knew 49.4% of health workers. That all pregnant women who are HIV-infected will not give birth to babies with AIDS, knew only 40.4% of health workers. Health care professional's best responded to questions: even a single unprotected sexual intercourse can lead to HIV infection (94.6%) and that the person who looks healthy can transmit HIV (93.3%).

Medical doctors-specialists have significantly higher average of correct answers (6.42) on the general knowledge about HIV/ AIDS than nurses/ technicians, dental nurses/ technicians and laboratory technicians. Doctors of medicine-general practitioners (mean 6.80) know significantly more than nurses/ technicians, dental nurses/ technicians and

laboratory technicians. Dentist (mean 6.15) knows considerably more than a laboratory technician. Graduate nurses/ technicians have a significantly higher average of correct answers (mean 6.63) than nurses/ technicians, dental nurses/ technicians and laboratory technicians (F=16.532, P<0.001). Health professionals on secondary levels of health care have

significantly higher average of correct answers on general knowledge about HIV/ AIDS than health workers of primary health care level (F=4.503, P=0.011).

When it comes to knowledge of health workers about basic measures to prevent HIV infection in the workplace, 89.2% of respondents knew that caution

Table 2. Knowledge of health workers on ways of HIV transmission and general knowledge of health workers about HIV/AIDS

Type of knowledge	Question	Percentage of correct answers
Knowledge of transfer	Semen	90,6 (905/999)
	Blood	99,1 (1086/1096)
	Vaginal fluid	88,6 (875/988)
	Breast milk	61,3 (564/920)
	Other body fluids containing blood	89,2 (884/991)
	Saliva	45 (425/944)
	Sweat	66,1 (595/900)
	Tears	64,3 (581/904)
	General knowledge	Can people get HIV from mosquito bites?
Standard sterilization procedures are sufficient to sterilize instruments used in HIV-positive patient.		59,5 (646/1085)
Is it possible that a healthy-looking person can transmit HIV?		93,3 (1024/2097)
All pregnant women who are HIV-infected will give birth to babies with AIDS		40,4 (440/1090)
Sure diagnosis of HIV infection is achieved by detecting specific antibodies		
ELISA test		42 (407/968)
Vestern blot test		45,3 (389/859)
HIV infection can be detected with certainty 6-8 weeks after infection		52,8 (567/1074)
A person can be infected with HIV for more than 10 years without symptoms of AIDS		82,4 (903/1096)
General measures to prevent HIV infection in the workplace	Even a single unprotected sexual intercourse can lead to HIV infection	94,6 (1047/1107)
	Person can get HIV from sharing utensils or food with a person who has HIV or AIDS?	59 (647/1096)
	Wearing gloves	86,1 (920/1069)
	Wearing protective glasses and masks	56,1 (561/1000)
	Being careful in all dealings with patients and their material	89,2 (951/1066)
General measures to prevent HIV infection in the workplace	Mandatory testing of all patients prior to surgical intervention	16,4 (158/964)
	Good knowledge and application of standard precautions to protect against infection	85,1 (885/1044)

in all dealings with patients and his material is a good measure of protection. Only 16.4% of health workers knew that the testing of all patients before surgical intervention is not a measure of protection against HIV infection in the workplace (Table 2).

Accidents in the workplace, the application of the basic measures for infection prevention and disposal of medical waste

In the past 12 months, 29.3% of health workers had needle-stick accident while working with patients, 33.3% were in contact with patient's blood through damaged skin, and 26.3% of health care workers were exposed to blood spatters from patients onto eye or other mucous areas.

Health workers of secondary and tertiary levels of care generally referred to needle-stick injuries in the

last 12 months (73.4%). While 72.9% of health workers always dispose of medical waste in special containers of solid walls (Table 3).

Sixty-five percent of health workers responded that they always wear gloves, and 36.4% of health workers responded that they always use a mask. 66.6% of health workers never use protective glasses (Table 3). Among health workers who use protective gloves in the lowest percentage ever are the laboratory technicians (52.3%). Dentists most frequently use masks (63.9%), and laboratory technicians use a mask the least (11.3%, $P < 0.001$). Masks are more often always used by health care workers in the secondary (43.8%) and tertiary care (47.2%) compared to the primary care (28%, $P < 0.001$). The difference was not statistically significant in the use of gloves among different levels of health care.

Table 3. Accidents in the workplace, the application of the basic measures for infection prevention and disposal of medical waste

		Yes % (n)	No % (n)	
Type of accident in the last 12 months	To be pricked on a needle	29,3(326)	61,6 (684)	
	To be hurt by sharp object	24,5(272)	62,8 (689)	
	To be in contact with the patient's blood through damaged skin	33,3(370)	57,9 (643)	
	To get patient's blood in the eye or other mucous membrane	26,3(292)	63,9 (710)	
		always	sometimes	never
Disposal of medical waste	With other garbage in the basket and/or plastic bags	54,8 (609)	7,2 (80)	11,4 (127)
	In the basket and/or plastic bags separately from other garbage	27,7 (308)	13,1 (145)	38,1 (423)
	In separate bowl with solid walls (impervious containers)	8,2 (91)	10,1 (112)	72,9 (810)
In interventions in which it is possible to get in contact with patients blood or his bodily fluids, do you wear?	Gloves	2,6 (29)	31,1 (348)	64,8 (724)
	Double gloves	45,2 (505)	34,3 (383)	4,5 (50)
	Mask	10,4 (116)	48,4 (541)	36,4 (407)
	Protective glasses	66,6 (745)	16,3 (182)	5,4 (60)

47.7% of health workers responded affirmatively to the question: "Have you ever been tested for HIV?". More than half of health workers, precisely 60.2%, agree that the most frequent mode of contracting HIV among health care workers is through work place exposure.

Attitudes

Table 4 shows the distribution of responses given by health professionals on any single issue, i.e. whether they agree with the stated claims. The results pertain to the overall sample and are presented in percentages.

Table 4. Health provider attitudes

	Agree % (n)	Not sure % (n)	Disagree % (n)
I am comfortable providing health services to clients who are HIV-positive.	67,6(746)	27,9(308)	4,4 (49)
I avoid touching the clothing and belongings of clients known or suspected to have HIV for fear of becoming HIV-infected.	18,5(204)	22,5(248)	59 (651)
Persons at risk (sex workers, injections drug users, men who have sex with men) deserve to receive the same level and quality of health care as other clients.	84,3(932)	8,1 (90)	7,5 (83)
Health workers who are HIV positive should not be allowed to work with patients.	35,4(392)	29,6(327)	35 (387)
On patient medical charts and histories HIV positive status should be clearly indicated.	72,5(803)	10,9(121)	16,5(183)
Patients should be tested for HIV without their consent prior to surgery or other interventions.	66,9(740)	16,8(186)	16,3(180)
HIV-positive women should not get pregnant.	55,4(604)	29 (316)	15,6(170)
Patients with HIV/AIDS should be made to pay for gloves, AIDS kits, and other infection control supplies	7,1 (78)	15,7(173)	77,3(853)
Most people who are infected with HIV or have AIDS are blame for it.	22,5(249)	26,2(290)	51,3(567)
Promiscuous men are the ones that spread HIV in our community.	48,6(529)	34,5(375)	16,9(184)
Intravenous drug users spread HIV infection.	83,5(918)	10,6(117)	5,8 (64)
If you knew that your work colleague is HIV positive would you work with him.	57,6(634)	36,1(398)	6,3 (69)
I would feel ashamed if someone in my family had HIV/AIDS.	16,4(181)	31,4(347)	52,3(578)
I would share eating utensils and food with HIV positive person	16,7(183)	38,5(423)	44,9(493)
Patients who are test positive have the right to decide whether or not their relatives should be informed	56 (615)	17,2(189)	26,8(294)

Almost two thirds of respondents are comfortable providing health services to clients who are HIV-positive, and 16.4% would feel ashamed if a family member was diagnosed with HIV. On the other hand, 83.5% of health professionals agree with the statement that injection drug users spread HIV, 72.5% of health workers believe that HIV-positive status should be clearly indicated on patients records and in personal histories of people living with HIV, and 66.9% of health workers believe that patients should be tested for HIV without their consent prior to surgery or other interventions.

The differences in attitudes between different types of health care workers were tested by Pearson χ^2 test. A statistically significant difference in the distribution of responses was observed in nine attitudes.

Medical doctors - specialists and general practitioners, and graduate nurses/ technicians in the greater number would, without any discomfort, provide health services for people living with HIV. Dental nurses/ technicians in significantly higher degree than other health workers agree with the statement that they avoid touching clothes and belongings of persons living with HIV. Medical doctors-specialists and general practitioners in a smaller percentage agree with the statement that health care professionals living with HIV should not be allowed to work with patients. Dental nurses/ technicians, laboratory technicians, physicians-general practitioners and dentists mostly agree that medical charts and history of patients with HIV should be marked. Nurses/ technicians and laboratory technicians in a greater percentage agree with HIV testing without patient's consent before surgery or other interventions, and with the statement that HIV positive women should not get pregnant. A smaller percentage of dental nurses/ technicians compared to health workers of other occupations, considers that promiscuous people spread HIV. Medical doctors-specialists and general practitioners in a larger percentage agree with the statement that intravenous drug users spread HIV (Table 4).

When it comes to agreement with the claims of health workers by the level of health care, statistically significant differences were observed on two issues: HIV-positive women should not get pregnant (I - 49,8%, II - 65%, III - 53,7%) and sharing eating utensils and food with a person living with HIV (I - 13,9%, II - 18,3%, III - 19%).

Discussion

Results of survey show that 47.8% (533/ 1115) of health care professionals appeared to be providing health care to persons living with HIV. Eight percent of health care providers said that they knew a health worker who has HIV/ AIDS or died of the disease. Such knowledge did not affect willingness to provide health care, compared the other group of health workers.

Answers of health providers in the Federation of Bosnia and Herzegovina on questions about transmission of HIV indicate a higher level of knowledge of physicians-specialists and general practitioners in relation to the level of knowledge of nurses, dental nurses and laboratory technicians. Health care workers with length of service up to 10 years had the highest average of correct answers, but difference was not statistically significant. Health care workers are confident that HIV is transmitted through blood, sperm and other body fluids containing blood, but not so through other body fluids (saliva, sweat and tears). General knowledge about HIV shows a similar distribution of the average correct answers among the various professions of health workers as well as in the case of answers to questions about HIV transmission.

That people can become infected with HIV through mosquito bites considered 49.4% of respondents. A lack of knowledge is demonstrated also on the question of vertical transmission of HIV, from mother to child.

Health workers at the secondary level of care know considerably more than health workers in primary health care, with no significant effect of the length of service of health workers.

These results lead to the conclusion about necessity of training for all medical staff, especially nurses/ technicians, and providers on the primary health care level.

More than two-thirds of respondents (71.2%) had some previous training in the field of HIV/ AIDS. The relationship between the level of knowledge about HIV transmission and previous training of health workers did not show a statistically significant difference. On the other hand, previous education has influenced the level of general knowledge about HIV in health care workers.

29.3% of health workers in Federation of Bosnia and Herzegovina had needle-stick injuries in the last 12 months, while 33.3% of health workers were in

contact with patient's blood through skin. According to a report by the World Health Organization, percentage of health workers who have had one or more needle-stick injuries/ per year for different countries are as follows: Kenya 75%, Uganda 44%, Burkina Faso (at 2000.- 55%, and at 2003.- 17%), Cambodia 47%, and drastic data of 91% of junior doctors in South Africa who have experienced accidental needle-stick (6,7).

Accidental injury of health workers increases the risk of infections that are transmitted through blood. With regard to HIV, research shows that the average risk of infection by exposure to infected blood, needle-stick or cut is 0.3% (1:300). The risk after exposing eyes, nose and mouth to HIV infected blood, is an average of 0.1% (1: 100), while the risk after exposing undamaged skin to HIV-infected blood is estimated to be less than 0.1%. There were no reported cases of HIV transmission due to exposure of uninjured skin to small amounts of blood (a few drops of blood on the skin for a short period time) (2).

The risk of transmission of infection from an infected patient to health worker through a needlestick injury when it comes to other blood-transmitted diseases is higher: 3-10% for hepatitis B and 3% for hepatitis C.

Percentage of health workers who were tested for HIV was 47.7%, and more than half of health workers (60.2%) believed that the greatest risk of HIV infection was exactly in the workplace. Consequently, protection measures for health care workers in the workplace are important. The vast majority of respondents knew that being cautious in all dealings with patients and their material is a good measure of protection. Only 16.4% of health workers know that the testing of all patients before surgical intervention is not a measure of protection against HIV infection in the workplace.

Dentists in the greatest percentage applied protection measures where contact with blood of a patient was possible. Laboratory technicians, when compared to other health care workers, use gloves, masks and protective glasses in the smallest percentage. If patient is HIV positive, 64.3% of health workers would apply greater precautions.

Just after the outbreak of HIV/ AIDS, in the 1980s a guide was developed to protect healthcare

workers from HIV infections and other blood-borne infections, known as "universal precautions". In the following years it was somewhat modified, but the essence remained the same, and a set of measures for prevention of infections that can be applied to all patients, regardless of the assumptions and speculation about some health workers health status (8).

Disposal of medical waste is a very important segment of the work process and precautions, and 11.4% of health workers always dispose of medical waste with other garbage.

Lack of knowledge about ways of HIV transmission is usually associated with stigmatizing attitudes, and cause fear of infection and rejection of contact with people living with HIV. That was the basic domain where the initial studies attempted providing stigma.

According to this survey 67.6% of health workers in Federation of Bosnia and Herzegovina are comfortable to providing health services to persons living with HIV.

There is another form of stigma and discrimination, morals or value-driven stigma (8). Numerous studies confirm that at least three key dimensions are important for measuring in this domain: shame, blame and judgment (4). Health workers are members of the community in which they work their views reflect the prevailing stigma that exists in the community, especially toward the marginalized groups, such as sex workers. Attitudes of health workers that are related to shame and guilt, as the main causes of stigma and discrimination, were obtained through different answers.

Small percent (4.4%) of health workers in Federation of Bosnia and Herzegovina would feel uncomfortable providing health services to clients who are HIV-positive. Survey in Tanzania reported 3% of health providers. Health workers in the most agree that injection drug users spread HIV infection (83.5%). That promiscuous people spread HIV agrees 48.6% of health workers.

When it comes to the rights of people living with HIV, more than half of health workers in the Federation of Bosnia and Herzegovina believe that women who are HIV positive do not need to remain pregnant. Literature, however, shows that the overall risk can be reduced to less than 2% by a

package of evidence-based intervention (9).

Although the patient's right to confidentiality is guaranteed by the rights, duties and responsibilities of patients, some health professionals have different opinions when it comes to patients living with HIV (26.8%). UNAIDS and WHO encourage voluntary disclosure. The disclosure that is voluntary, respects the autonomy and dignity of infected persons, support for confidentiality, by a person and her family, his/her sexual and injecting partners, leads to a larger opening in the community on issues of HIV/AIDS has created an ethical imperative to help the uninfected and infected persons (10).

Two thirds of health workers in Federation of Bosnia and Herzegovina agree with claims that patients must be tested for HIV before surgery and that the medical charts and personal histories of HIV-positive status should be clearly defined. Survey in India 86%, Serbia 64.3% (11,12). With this regard, the low percentage of correct answers to the question of mandatory testing as a measure of protection, or the knowledge of HIV status of the patient.

The terms discrimination and stigma are used to encompass a broader set of activities that are associated with discrimination. Discrimination often implies unlawful acts of exclusion or abuse that occur in formal institutional settings. The broader term that is used here includes important stigmatizing actions that are not normally associated with the term discrimination including gossip, as well as social and physical isolation of people with HIV status (4).

This study among health care workers provided an opportunity to assess the presence of different forms of stigma and discrimination among health workers in Federation of Bosnia and Herzegovina. In low prevalence settings, such as Federation of Bosnia and Herzegovina, where it is likely that most of respondents do not personally know persons living with HIV, question on observed stigma was presented more broadly, asking if respondent ever heard of anyone who has experienced a specific form of stigma. 80.1% of health workers in Federation of Bosnia and Herzegovina have seen or heard at least one form of discrimination against HIV/AIDS positive patients in their health care institution. The most common are the additional

measures of sterilization and using latex gloves for performing non-invasive exams on clients suspected of having HIV.

Stigma is phenomenon associated with many chronic health conditions: HIV/AIDS, leprosy, tuberculosis, mental illness, epilepsy and disability. Van Brakel selected 63 papers that addressed the issue of measurement of stigma or related constructs, for HIV/AIDS 14 instruments (10 were developed for use in United States) (13).

As Goffman wrote, stigma "constitutes a special discrepancy between virtual and actual social identity" (14).

There are some limitations to the present study: some questions are hypothetical, they may suffer from social desirability bias, as experience from other countries confirms the complexity and multi-dimensionality of the problem of stigma and its measuring.

In conclusion, this survey has shown that knowledge of health workers on the mode of HIV transmission and on general issues, as well as knowledge and application of safety measures is not satisfactory. Such results are reflected in the attitudes toward persons who are living with HIV.

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Preparedness of general practitioners to provide medical care in the events of radiological terrorism or radiation accidents

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Abstract

Aim: Optimization of medical care in cases of radiation terrorism or radiation accidents through study and analysis of the preparedness of general practitioners (GPs) in Sofia, Bulgaria, to participate in such activities in line with the recommendations of leading international organizations in the field of nuclear safety.

Methods: We performed a single cross-sectional study in order to collect data and analyse the preparedness of general practitioners. The study was performed in September 2011. The relative share of the study group of 400 GPs was 45% (out of a total of 890) with a standard error of 2.5% and 95%CI=40.1%-49.9%.

Results: Knowledge and skills of general practitioners are fragmented and superficial, where any practical experience in the medical care for victims is missing. The majority of participants in the study reported that they needed additional training in the medical management of victims of radiation terrorism or radiation accident (85.5%, 95%CI=81.66%-88.8%).

Conclusions: Preparedness stands on a low level in Bulgaria. It is necessary to establish instructions and algorithms for action in the cases of radiological terrorism and injuries from ionising radiation to support physicians in providing medical care.

Keywords: general practitioners, medical care, radiation accident, radiological terrorism.

Introduction

Nuclear terrorism is the intentional use of nuclear weapon or the intentional causing of accident in a nuclear facility. Radiation terrorism is the intentional use of radioactive substances (sources or materials) against people. The International Commission on Radiological Protection (ICRP) uses the term radiological terrorism as a common term instead(1). If nuclear ammunitions are excluded, all the remaining possibilities to use sources of ionizing radiation (SIR) could not lead to a situation with a large number of severely injured people, since in smaller doses of ionizing radiation risks are mainly related to stochastic effects. On the other hand, due to the existing radiophobia amongst the population, the usage of SIR would trigger an enormous psychological effect, which is in fact one of the main goals of terrorism – to spread panic among the general population, as well as mistrust in the ability of authorities to guarantee the security and normal functioning of the state (2). The multiplication of effects – fear of terrorism and fear of radiation, make the possibility of realization of a radiological terrorism scenario very real (3).

The possible scenarios for radiological terrorism include: nuclear weapon attacks; blasts of nuclear installations or a repository of nuclear wastes; dissemination of radioactive materials (dirty bombs); radioactive contamination of nutritional products, drinking water, etc.; a source of ionizing radiation with high activity used for exposure of a relatively small group of people to high doses. The most probable scenario is the dissemination of radioactive material (dirty bombs) (4-7). To date, no cases of radiation and nuclear terrorism have been registered. Only a few unrealized threats have been reported (6,7). According to some authors, only two cases in the last 50 years can be considered as nuclear terrorism acts (5,8).

In its essence and consequences, the radiological terrorist act is an accident, albeit one deliberately provoked. This means that when providing medical care to the population, we must make use of the experience gained in preceding accidents. Population health effects and medical care provision activities can be foreseen. The Radiation Emergency Assistance Centre of the US (REAC) defines the case in Goiania as an “accident, which is identical to a terrorist act”. Other accidents may also be

viewed in similar light (8-10).

A comprehensive analysis of information from radiation accidents shows that very often medical care is provided to the injured by general practitioners (GPs) (11, 12). The main reason why radiation injuries remain unrecognized is the insufficient knowledge of consequences from exposures to SIR and their clinical manifestations. This leads to inappropriate and sometimes outright improper treatment of victims in the first hours after the accident. This aggravates the patients' condition and limits the opportunities for effective treatment (11,13-17).

The relevance and significance of radiological terrorism justifies many studies on the preparedness of hospitals and emergency wards (18). The role and place of GPs have been underestimated. So far, no studies on the preparedness of family physicians to participate in the medical care provision in the event of radiological terrorism have been performed. All of this background provoked us to conduct the present study.

Objective

Optimization of medical care in radiation terrorism through study and analysis of the preparedness of GPs in Sofia, Bulgaria, to participate in such activities in line with the recommendations of leading international organizations in the field of nuclear safety.

Methods

We performed a single cross-sectional study in order to collect data and analyse the preparedness of GPs. The study was performed in September 2011.

We used direct individual survey “face-to-face” using a questionnaire developed by us on the basis of documented analysis of preceding radiation accidents, existing emergency plans, the results from performed exercises for coping with radiation accidents, and the recommendations of leading national and international organizations (IAEA, ICRP, BEIR, NCRP, NRPB, REAC, and UNSCEAR) for medical provision in cases of radiation accidents. The selection process of persons included in the study aimed to provide a representative sample of GPs in Sofia. We drew a simple random sample using a generator of random numbers and based

on the register of GPs in Sofia. This register is publicly available through the website of the Regional Health Insurance Fund. The relative share of the study group of 400 GPs was 45% (out of a total of 890) with a standard error of 2.5% and 95% CI=40.1%-49.9%.

The individual data was collected in the course of three months. We used the survey network of one of leading sociological agencies in Bulgaria. The surveying team was specifically selected and trained to work with general practitioners.

All surveys were performed in the physicians' offices. Some of the selected physicians were visited several times due to absence at the time of study. Each filled questionnaire was carefully reviewed. The dropout percentage in the course of the study was 10%. During the course of study we performed control visits in the offices of 50 (12.5%) of the persons included in the sample.

We processed the collected data using the statistical package SPSS, version 19.0. The adopted level of significance in the testing of H_0 was $\alpha=0.05$ for a guaranteed probability of 95%. In order to validate results from the performed analyses we used the following statistical methods: descriptive analysis; tests for interdependence between descriptive data - χ^2 Pearson, Exact test, coefficient of contingency of Cramer (V) - for orientation estimation of the degree of manifestation of the dependence found by the χ^2 - method; tests for comparing relative shares - Z test.

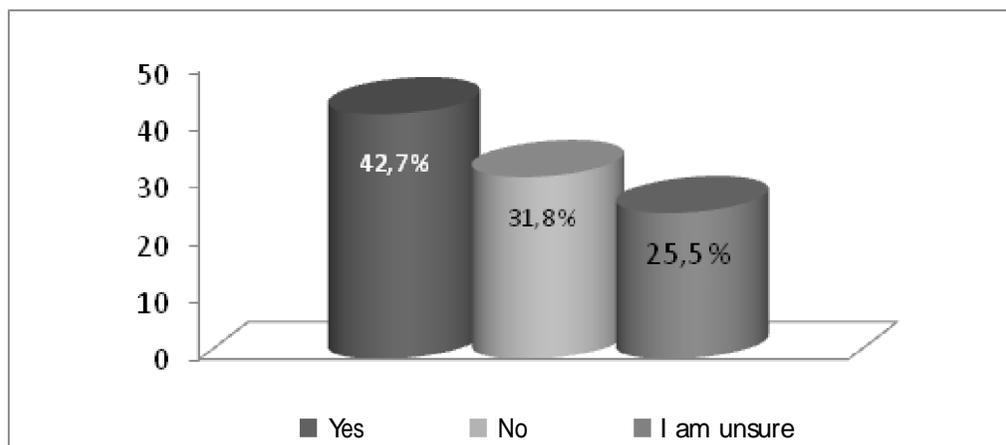
Results

Some social and demographic features of the 400 GPs participating in the study were as follows: 319 were females with a relative share of 79.7%. Males were 81 (or, 20.3%). Distribution by age demonstrated a highest share of physicians aged between 41 and 50 years (168, with a relative share of 42%), followed by those aged between 31 and 40 years (115, or 28.7%). Under the age of 30 years were only 14 (or, 3.5%). By specialty, the largest share consisted of physicians with a specialty in general medicine (40.8%), followed by internal diseases (29.3%) and paediatrics (11.5%). Conversely, 12 physicians had other specialties.

At the stage of introductory questions studying the respondents' attitudes towards the relevance and significance of the problem, 36.5% determined the relevance as "very high" and "high", 17.9% as "low" and "very low", and 22.8% - "neither high, nor low". A larger share of physicians determined the significance as "very high" and "high" (50%), as "low" and "very low" (13.3%), and 15.5% as "neither high, nor low".

A significant question concerning GPs' behaviour after an accident was: "Do you think that providing medical care to persons with external radiation exposure carries risks for the physician?". "No" answers were evident for only 31.8% of the respondents. The relative share of "yes" answers amounted up to 42.7%, which confirmed the alternative hypothesis (H_1) for a significant difference

Figure 1. "Do you think that providing medical care to persons with external radiation exposure carries risk for the physician?"



between the compared relative shares ($Z=4.40$, $P<0.0001$). Answers are presented in Figure 1.

In confirmation of the necessity of new knowledge and skills were presented the answers to the question: "Can you perform preliminary treatment of victims with radiation injury?". Only 3.8% of all respondents were convinced about this issue and answered "yes" to this question, which was significantly different than the share of "no" answers (12.6%, $Z=5.30$, $P<0.0001$). An insignificant share was evident for the "probably" answers (18.9%). An extremely important phenomenon in radiation terrorism is the external contamination followed by the incorporation of radioactive substances in the body (13,16, 19). Only 4.1% of the respondents knew how to perform primary individual deactivation.

Experience with previous radiological accidents shows it is absolutely imperative that GPs have clearly defined responsibilities. Our study showed that any instructions and procedures for action on behalf of GPs are missing. None of the respondents had such an instruction (100%, 95%CI=99.08%-100%), which clearly confirms the necessity of algorithms for action in the event of radiation terrorism.

The question "Do you know who to consult in the case of radiation injury?" generated the following results: persons responding "yes" were 129, which comprises 33.1% of all the respondents. The relative share of "no" answers was 66.9%.

According to the recommendations of ICRP and the US National Council on Radiation Protection and Measurements (NCRP), even in the absence of concrete data, in every radiological accident situation the presence of radioactive contamination should be presumed and precautionary measures should be taken (such as protective clothing, respirators, etc.). Even the most ordinary medical coat, surgical gloves and mask can protect the body from contamination (9,10,19). Almost none of the respondents had personal safety means. Only two of the respondents had such safety means, representing 0.5% of all respondents.

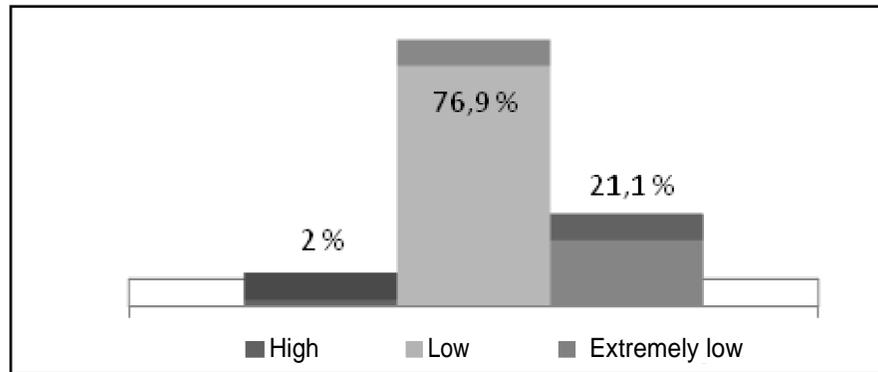
Analysing experience obtained so far, a significant number of victims with Multiple Idiopathic Physical

Symptoms (MIPS) may be expected in the event of radiation terrorism to affect the GPs (20). Normally, GPs represent the first and basic level of medical care provision. In these cases the usage of some more elementary and easily operating types of dosimeters and radiometers may prove useful, both for monitoring the injured and reducing stress among the affected. Besides, one should not enter the zone of radiation accident situation without an individual dosimeter, unless the aim is saving the lives of people. Even the simplest pocket dosimeters, radiometers and indicators may prove necessary and vitally important. Our study showed that only 9 physicians had a dosimeter-radiometer, with a relative share of 2.3%.

GPs should be able to start initial symptomatic treatment. Nausea, vomiting and anorexia typical of the prodromal phase of the acute radiation syndrome, are symptoms from the gastro-intestinal system, but control over their expression is localized in the central nervous system. These are affected by the administration of 5-HT₃ receptor antagonists, such as Dolasetron, Ondansetron, Tropisetron, and Granisetron, which block the 5-HT₃-receptors in the gastro-intestinal tract and the haemo-receptive trigger zone of the medulla (e.g. Granisetron tablet 1 mg 2 times daily or 2 mg once a day). Diarrhoea is controlled by Loperamide hydrochloride, Lonox (diphenoxylate/ atropine) (5). On the question: "Do you have medications for preliminary treatment of persons with radiation injury?", the answers "yes" constituted only 14.8% of the overall sample. The relative share of "no" answers was 85.2%.

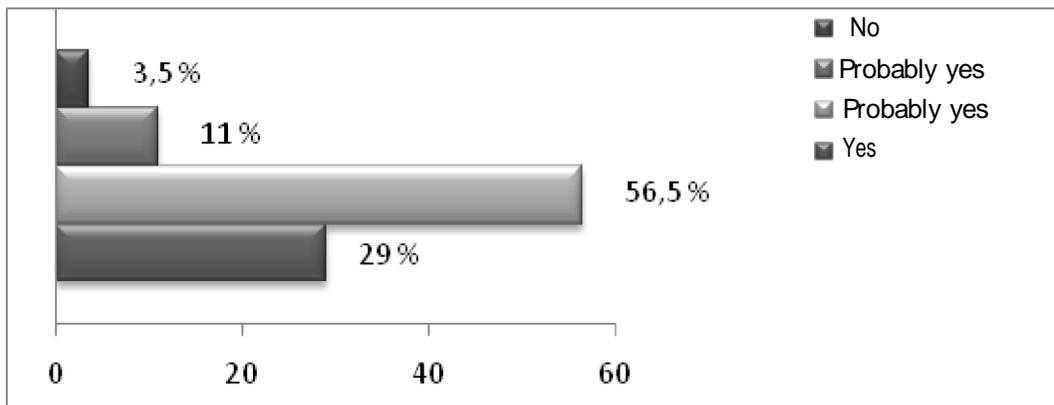
"How would you rate your preparedness for action in the event of radiation terrorism?" was a survey question aimed at self-appraisal of GPs preparedness. The number of participants responding with "low" and "very low" was 390, which represents 98% (95%CI=96.1%-99.13%) of all responses. The relative share of "yes" answers was only 2% (95%CI=0.87%-3.9%), which clearly rejects the null hypothesis (H_0) and proves the alternative hypothesis (H_1) for a significant difference in the compared relative shares ($Z=137.14$, $P<0.0001$) (Figure 2).

Figure 2. "How would you rate your preparedness for action in the event of radiation terrorism?"



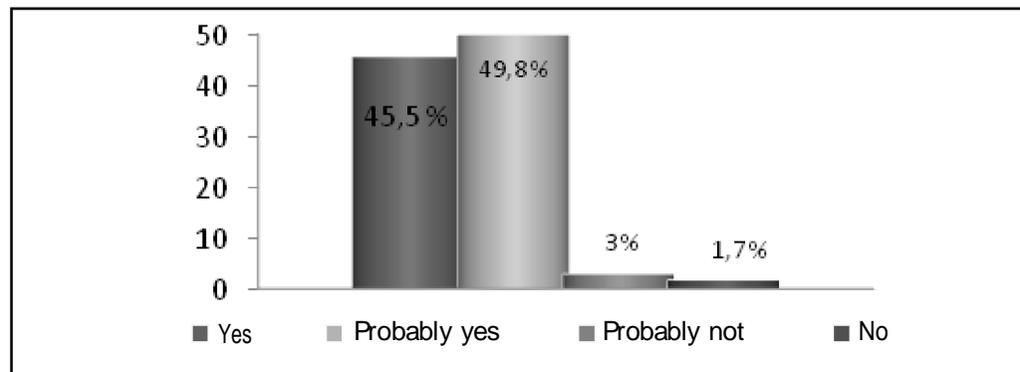
The majority of participants in the study considered that they need additional training in the medical management of victims of radiation terrorism (85.5%, 95% CI=81.66%-88.8%). Only 14.5% (95% CI=11.19%-18.34%) of them reported they don't need such training. These data are presented in Figure 3.

Figure 3. "Do you feel the need for additional training in medical management of victims of radiation terrorism?"



Almost all GPs consider it necessary to have at their disposal a simplified algorithm for action in radiation terrorism (95.3%, 95% CI=92.74%-97.15%). The relative share of individuals with an opposite opinion was only 4.7% (95% CI=2.84%-7.26%). Figure 4 presents the percentage distribution of answers on this question.

Figure 4. "Do you think it is necessary to have at your disposal an algorithm for action in the event of radiation terrorism?"



Discussion

Despite a number of indisputable advantages, approved by the European Group for Blood and Marrow Transplantation (EBMT) uniform standardized procedure for diagnostics and treatment of the injured, whose underlying basis is the programme METREPOL (Medical Treatment Protocols for Radiation Accident Victims), offered by Fliedner et al., this approach is largely unfeasible for GPs (21,22). This system does not account for exposure from external contamination, incorporation of radioactive substances and combined injuries, which are of particular significance in case of radiation terrorism. The comprehensive examinations recommended by these authors require highly qualified personnel and complex equipment. The diagnosing of radiation injury from GPs is complicated at present because specific symptoms are lacking. For these reasons GPs should have at their disposal a simplified algorithm for action in external whole corporal and/ or local exposure and in the case of external and/ or internal contamination.

Conclusions

The following conclusions were drawn from the current study:

- The medical aspects of radiation terrorism aftermath may be grouped into four directions: dealing with the acute radiation syndrome, therapy of local radiation injuries, decontamination and decorporation, and the overcoming of psychological effects.
- The experience gained in previous accidents

shows that very often medical aid to victims is provided by GPs, which points to the need for these physicians to have at their disposal clearly defined tasks and responsibilities in the cases of radiation terrorism and radiation injuries.

- Collected and analysed data allows us to state that the knowledge and skills of GPs are fragmented and superficial, where any practical experience in the medical care for victims is missing.
- Preparedness stands on a low level. It is necessary to establish instructions and algorithms for action in the cases of radiation terrorism and injuries from ionising radiation to support physicians in providing medical care.
- Almost all participants in the study reckoned they needed additional training.

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Assessment of nutritional status and dietary patterns of the adult Roma community in Albania

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Abstract

Aim: Assessment of nutritional status and dietary patterns of Roma population should be documented because they may reflect the extent of marginalization and associated health risks. This study assessed the nutritional status and dietary patterns among Roma community in Albania.

Methods: A representative sample of 400 Roma individuals living in five districts of the country was included in this study. A food frequency questionnaire was administered, body weights and heights were measured and socio-demographic and health information was collected through interviews. Factor analysis was used to identify dietary patterns of the Roman community.

Results: The results of this study revealed that, in Roma population living in Albania, 49% of individuals had a normal body weight, 43.8% were overweight and/or obese (especially the age group >25 years) and 7.2% were underweight. Two dietary patterns were identified: one pattern with a higher consumption of dairy products, vegetables, and milk and another pattern included fat, bread and alcohol. The increase in BMI is due to disproportionate distribution of food items and calories derived rather than a balanced diet.

Conclusion: Majority of the Roma population in this study sample from Albania consumed a high-calorie diet resultant mainly from cooking oil, bread and alcohol, which may predispose these vulnerable individuals to overweight and obesity.

Keywords: dietary patterns, marginalized population subgroups, nutritional status, Roma community, vulnerable subgroups.

Introduction

Before the 1990s, the situation of Roma community was quite similar to the rest of the Albanian population. They worked in different state sectors and incomes of their families were on the same level as incomes of the majority of the population. After the 1990s, however, the situation of Roma people in Albania grew critical; most of the Roma people lost their jobs because of the privatization of the state industry. The democratization process that developed in Albania and the period of transition caused an economic catastrophe for Roma families. Some factors influenced the conditions of Roma in this period in particular, for example, the competition on the free trade market and labor market and migration. Currently, around 90% of Roma people in Albania are unemployed (1, 2). Some of them are self-employed in the trade market, but other Roma businesses have been unsuccessful. The average expenses of a Roma family are 199 USD per month; 40% of Roma families live in bad conditions, and; only 20% of Roma people have an adequate income to buy medicines. Furthermore, Roma individuals have difficulties in benefiting from state social assistance policies. One of the main reasons of the disability to compete in the arising free market economy is the low level of education. Illiteracy amongst Roma has increased during the transition period. The percentage of illiteracy is as high as 52.4%. As for the sex distribution, 56.5% are female and 48.3% are male. About 40% of Roma families ask their children to work to ensure primary needs and this is the main reason why children do not attend school. Another important emerging problem is that many Roma families have bad housing conditions. Parts of their houses have been destroyed by government with the promise of rebuilding them, but this issue has not been solved to date. As a consequence of this, Roma people live in shamble cabins or even in the streets (3,4).

To date, much of the research from international organizations and NGOs regarding Roma population have focused on health aspects and various health indicators of childhood, infant nutrition and parenting practices. This is the first study to report dietary habits and obesity measures among adult Roma population in Albania highlighting the socioeconomic inequalities

and the consequences on nutrition (5-7).

Methods

This is a cross sectional study conducted on the year 2010. A stratified two-stage cluster-sampling was used for selecting a representative sample of 400 subjects aged ≥ 15 years from Roma communities of five districts in Albania: Tirana, Berat, Korça, Vlora and Pogradec.

The study was approved by the ethical committee of the Medicinal Faculty of Tirana University. Each participant signed an informed consent form before enrolment in the study.

A structured questionnaire was used to collect socio-demographic data of participants, housing and living conditions, economic status, dietary patterns and drinking habits. Participants in the study were asked how often they usually consumed each food item from the food frequency questionnaire. The food-frequency questionnaire included the most common food items and was administered by trained interviewers. Participants in the study were asked how often they usually consumed each item. The four possible answers ranged from “never”, “sometimes”, “often” and “always”. The intake frequencies of bread and alcohol were converted into average daily intake for each item and for each individual participant. Additional information collected during the interview consisted of the cooking manner and consumption of foods items. Dietary patterns were identified using factor analysis (8,9).

Anthropometric measurements included weight (kg) and height (m). Overall obesity was measured with the body mass index (BMI), calculated as weight/height² (kg/m²).

Chi-square test was used to compare the proportions between categorical variables. Student's t-test was used to compare the mean food intake and BMI leaves by sex of study participants. Linear regression was used to determine the association of BMI and age. Spearman's correlation coefficient was used to assess the linear relationship between food patterns and BMI.

A (two-tailed) p-value of ≤ 0.05 was considered statistically significant.

Data were analyzed with IBM SPSS Statistics,

version 20 for Windows.

Results

The mean age of participants was 36.5 ± 14.2 years. The study population consisted of 161 (40.2%) men (mean age: 33.2 ± 12.4 years) and 239 women (mean age 36.5 ± 14.4 years).

Socio-demographic characteristics and lifestyle factors are shown in Table 1.

Almost half the subjects (184, or 46%) had no education at all, 190 (47.5%) had ≤ 8 years, 23 (5.7%) individuals attended the high school, and only 3 (0.8%) of them attended university studies

Table 1. Socio-demographic characteristics of study participants

Variable	Number	Percent
Gender		
Female	239	59.7
Male	161	40.2
Age (mean\pm SD)		
	36.5 \pm 14.2	
Age-group (years)		
15 – 25	104	26.0
26 – 35	109	27.2
36 – 45	92	23.0
46 – 55	51	12.8
56 – 65	27	6.7
>65	17	4.2
Residence		
Tirana	150	37.5
Berat	98	24.5
Korça	50	12.5
Vlora	52	13.0
Pogradec	50	12.5
Education		
None	184	46.0
≤ 8 years	190	47.5
9-12 year	23	5.7
> 12 year	3	0.8
Number of family members [mean (range)]		6 (1-20)
Number of family members employed		
0	157	39.2
1	142	35.5
2	73	18.3
3	21	5.2
4	4	1.0
5	2	0.5
>5	1	0.3
Income level (Lekë)		
<5000	124	31.0
5000-10000	78	19.5
11000-15000	75	18.8
16000-30000	97	24.3
31000-50000	24	6.0
>50000	2	0.5
BMI (mean\pmSD)		24.6 \pm 4.8

($\chi^2=304.9$, $P<0.01$). The vast majority of cases belonged to young age-groups. Individuals aged ≤ 45 years accounted for 76.3% of cases. The mean number of family members was six (range: 1-20). There was evidence of a very high rate of unemployment among Roma community. No family members employed was reported by 157 (39.2%) of participants, whereas 142 (35.5%) participants reported one employed family member, and 73 (18.3%) participants reported two employed family members. Overall, ≤ 3 employed members were reported by 28 (7%) of participants ($P<0.01$). Very low and/ or low middle monthly income was reported by 277 (69.3%) participants while middle and high income by 123 (30.7%) of them ($P<0.01$). Mean BMI value was 24.6 ± 4.8 . It was difficult for 356 (89.0%) study participants to buy food items due to economic reasons, whereas for 15 (3.7%) participants the main reason was the distance from the markets ($P<0.01$).

More than half of study participants 295 (73.7%) lived in houses or apartments, whereas the rest (105, or 26.3%) lived in slum areas ($P<0.01$). One hundred forty three (35.7%) participants had only one room followed by 139 (34.7%) having two rooms and 74 (18.5%) having three rooms and only 25 (6.4%) participants reported having more than four rooms ($\chi^2=102.0$, $P<0.01$). Having a kitchen or a specific place to cook the meals was reported by 142 (35.5%) of participants and for 63(44.4%) of them this place was outside the house ($P<0.01$).

A refrigerator was owned by 241 (60.2%) of

participants ($P<0.01$). Food items were washed before consuming by 363 (90.8%) of participants ($P<0.01$). The percentage of individuals who always washed their hands before meals was 37%.

More than half of participants (236, or 59%) did not pay attention to expiration date of food items ($P<0.01$). Conversely, 298 (74.5%) of individuals consumed potable water from the tap, 71 (17.8%) from the wells and only 31 (7.7%) of them consumed bottled water, ($\chi^2=311.0$, $P<0.01$). Furthermore, 215 (53.7%) of individuals consumed three meals per day, followed by 138 (34.5%) of individuals who consumed two meals and 45 (11.3%) who consumed one meal, ($\chi^2=109.2$, $P<0.01$). Also, 387 (96.7%) individuals reported that they cooked their meals at home ($P<0.01$).

The vast majority of individuals (300, or 82.5%) had no information about the nutritional values of the food items they consumed vs. 70 (17.5%) who reported they had information from television (48.6%), family (30.0%), friends (2.7%) and other sources of information (1.5%).

There were no significant differences by sex and age group with regard to monthly income, economic difficulties encountered by participants, having a refrigerator and a place to cook, frequency of food-washing, attention to foods' expiration date and information about the nutritional values of the food items that participants consumed. Finally, there was a significant decreasing trend of frequency of hand-washing by increasing age group

($\chi^2_{\text{for trend}}=5.3$, $P=0.02$).

Table 2. Frequency pattern of consumptions of selected food items

Food item	Frequency of consumption: N (%)			
	Never	Sometimes	Often	Always
Bread	12 (3.0)	-	301 (75.3)	87 (21.7)
Meat	74 (18.5)	235 (58.8)	67 (16.8)	24 (6.0)
Fish	134 (33.5)	194 (48.5)	60 (15.0)	12 (3.0)
Fat	4 (1.0)	-	19 (4.7)	377 (94.2)
Milk	155 (38.8)	186 (46.5)	-	59 (14.7)
Dairy products	41 (10.3)	232 (58.0)	105 (26.2)	22 (5.5)
Vegetables	17 (4.3)	157 (39.3)	136 (34.0)	90 (22.5)
Fruits	94 (23.5)	236 (59.0)	4 (1.0)	66 (16.5)
Other juices	114 (28.5)	240 (60.0)	-	46 (11.5)
Alcoholic beverages	284 (71.0)	37 (9.3)	53 (13.2)	26 (6.5)

Food consumption

The frequency of consumption of principal food items is presented in Table 2.

The bread made of wheat flour was consumed often and/ or always by 388 (97%) of individuals ($P<0.01$). The average daily intake of bread was 188.6 gr. Conversely, 235 (58.8) of individuals reported that they sometimes consumed fresh meat of poultry and veal followed by 74 (18.5%) who referred they never consumed it ($P<0.01$). A large proportion of individuals (134, or 33.5%) never bought fish, followed by 194 (48.5%) of participants who reported using it sometimes compared to 72 (18%) of individuals who used it often or always ($P<0.01$).

Almost all individuals (377, or 94.2%) used sunflower fat for cooking ($P<0.01$). Only 59 (14.7%) of individuals reported consuming milk regularly, whereas 186 (46.5%) and 155 (38.8%) reported occasional and/ or no consumption, respectively ($\chi^2= 65.7$, $P<0.01$).

Dairy products, mainly cheese (33%) and yoghurt (22.8%) were “often” consumed by 105 (26.2%)

individuals, “sometimes” by 232 (58%) individuals and “never” by 41 (10.3%) of them ($\chi^2=150.0$, $P<0.01$). Vegetables and greens were “often” consumed by 136 (34%) of individuals, “sometimes” by 157 (39.2%) of individuals and “never” by 41 (10.3%) of them ($\chi^2=68.6$, $P<0.01$). The most common greens used by 211(50%) of the study participants were lettuce and other plants with leaves growing wild on hills and mountains which were collected and cooked at home. Fruits were consumed “sometimes” by 236 (59%) of individuals, “never” by 94 (23.5%) and “always” by 66 (16.5%) of them ($\chi^2= 125.8$, $P<0.01$). Other juices were consumed “sometimes” by 240 (60%) of individuals, “never” by 114 (10.3%) and “always” by 66 (16.5%) of them ($\chi^2=114.0$, $P<0.01$).

Alcoholic beverages were “always” consumed by 26 (6.5%) of individuals and “never” by 284 (71%) of them ($P<0.01$). Most of consumers were men (102, or 25.5%) compared to 14 (3.5%) of women ($P<0.01$). Overall, 196 (49%) of individuals had a normal body weight without a significant difference, with 16 (43.8%) individuals who were overweight and

Table 3. Body Mass Index results by gender and age group

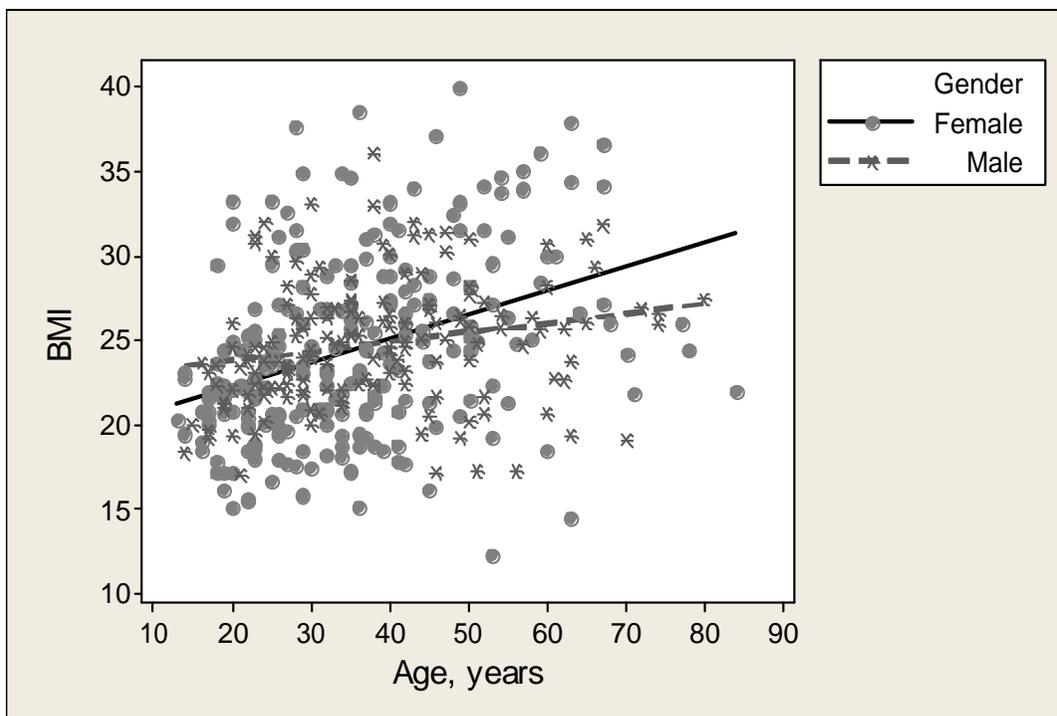
	Gender (%)			Age group, years (%)					
	Total (n %)	Women	Men	15 - 25	26 – 35	36 – 45	46 – 55	56 - 65	>65
Underweight	29 (7.2)	10.0	3.1	11.5	7.3	4.3	5.9	7.4	0.0
Normal	196 (49.0)	49.0	49.1	73.1	47.7	41.3	33.3	29.6	18.5
Overweight	117 (29.3)	24.3	36.6	8.7	35.8	38.0	35.3	29.6	29.6
Obese Class I	46 (11.5)	12.1	10.6	6.7	6.4	14.1	21.6	22.2	7.4
Obese Class II	12 (3.0)	4.6	0.6	0.0	2.8	2.2	3.9	11.1	7.4

obese of grade I and II ($P=0.2$). Both genders had an equal proportion of normal weight, 49% respectively (Table 3).

Underweight were 29 (7.2%) of individual distributed in all age groups. All of them reported economic difficulties. Women had a significantly higher proportion of underweight compared to men (10% vs. 3.1%, respectively, $P<0.01$). They all had a significantly lower consumption of, meat, fish

milk, dairy products, vegetables, fruits and other juices compared to women and men of other categories of BMI. Also, they never consumed alcohol. Men were significantly more overweight than women (36.6% vs. 24.3%, respectively, $P=0.01$). Overall, 41% of women and 47.8% of men were overweight and obese without a significant difference between them ($P=0.2$). Age group of >25 years was significantly more overweight than

Figure 1. Association of BMI with age



the age group of <25 years ($P < 0.01$). Linear regression analysis showed a significant increase of BMI with age ($F = 46.0$, $p < 0.001$) (Figure 1).

Dietary patterns

Almost all men and women consumed bread on a daily basis. The mean daily intake of bread was 188.6 gr (173.4 for women and 211.2 for men; $t = -5.3$, $p < 0.01$). The mean number of meals per day was 2.4 (2.3 for women and 2.5 for men; $t = -1.6$, $p = 0.09$). The mean daily alcohol intake of study participants was 147.4 ml (152.5 ± 95.0 ml in men and 110.7 ± 94.4 ml in women; $t = 1.5$, $P = 0.1$). Traditional drink (the “raki”) was most frequently used followed by beer and cognac.

The proportion of men who consumed meat was higher than in women (89.4% vs. 74.5 %, respectively, $P < 0.01$). There was no significant difference by gender and age group with regard to consumption of bread, meat, fish, fat, milk, dairy products, vegetables, fruits. The individuals ≤ 30 years consumed significantly more other juices than older ages ($P = 0.01$).

There was a significant increasing trend of frequency of alcohol use by increasing age group

($\chi^2_{\text{for trend}} = 6.7$, $P = 0.02$).

Factor analysis with varimax rotation method identified two dietary patterns: one with a higher consumption of dairy products, vegetables, and milk and another pattern included fat, bread and alcohol. A significant correlation was found between the daily intake of bread and alcohol with BMI ($\rho = 0.3$, $P = 0.02$ and $\rho = 0.3$, $P = 0.02$, respectively). Converting the quantity of bread into calories revealed that all individuals gained approximately 900 kcal/ day, whereas 63% of men and 5.8 of women gained additionally 300 kcal/ day.

Discussion

This study revealed that in Roma population of Albania, 49% of individuals had a normal body weight, 43.8% were overweight and/ or obese (especially, the age group > 25 years) and 7.2% of them were underweight. Women had a significantly higher proportion of underweight compared to men (10,11). Men were significantly more overweight than women. Individuals of Roma communities have a very high rate of unemployment and illiteracy, a low and very low monthly income and encounter economic difficulties. The vast majority of them lives in normal houses and/ or apartments

and has access to potable water as the rest of the population.

Our study found a rare consumption of fish, fruit and milk, and a moderate consumption of meat and vegetables (12,13). It must be emphasized that vegetables were not bought in the market. Lettuce and other wild plants were collected in the nature. Almost all study participants used bread and fat for daily cooking. More than half of men consumed regularly alcohol. Two dietary patterns were identified among Roma communities: one pattern with a higher consumption of dairy products, vegetables, and milk and another pattern included fat, bread and alcohol (14,15). The increase in BMI is due to disproportionate distribution of food items and

calories derived rather than a balanced diet (16,17).

Conclusions

The majority of the Roma population in this study group consumed diets with relatively large energy contributions from cooking oil, bread and alcohol. Taking into account the very high rate of unemployment which in turn has implication to sedentary lifestyle, the current pattern of food consumption may predispose individuals to obesity. This study suggests a need for further research on the consequences of this dietary pattern and for the development of appropriate dietary interventions for this population subgroup in Albania.

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Hematologic and cytogenetic responses of Imatinib Mesylate and significance of Sokal score in chronic myeloid leukemia patients

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Abstract

Aim: The objectives of this study were to evaluate the effects of treatment with Gleevec (Imatinib mesylate) in the chronic stage of chronic myeloid leukemia (CML), to follow up the hematological and cytological remissions in patients treated in this way and to observe the significance of Sokal score in these patients.

Methods: Evaluation study of Imatinib mesylate responses in chronic phase of chronic myeloid leukemia and the significance of Sokal score was performed at the Haematological and Genetic Service in University Hospital Center "Mother Theresa" in Tirana, Albania on a sample of 70 CML patient's with an average age of 48 years old (range, 18-72 years old) at the time of diagnosis. This study was conducted from April 2011 to April 2013. Hematologic and cytogenetic responses were assessed according to defined criteria. At the end of the study, responses were overall analyzed according to Sokal score.

Results: Complete hematologic responses were seen in 91% of patients while complete and major cytogenetic responses were observed in 59% and 78% of cases respectively. Responses were found to be higher in patients who had low Sokal score at the time of presentation.

Conclusions: Imatinib mesylate has a substantial activity in the chronic phase of CML. A low Sokal score predicts a higher hematologic as well as cytogenetic response in patients during chronic phase.

Keywords: chronic myeloid leukemia, cytogenetic response, hematological response, imatinib mesylate, Sokal score.

Introduction

Chronic Myeloid Leukemia (CML) is a clonal disease characterized by balanced translocation between the long arms of chromosomes 9 and 22 (Philadelphia chromosome). This translocation results in the head-to-tail fusion of the breakpoint cluster region (BCR) gene on chromosome 22 at band q11 with the Abelson (ABL) proto-oncogene on chromosome 9 at band q 34. The Ph chromosome is found in 95% of patients with CML, the remaining cases have no cytogenetically visible Ph chromosome, but are positive for the BCR-ABL fusion which is masked either as a cryptic translocation or within a complex karyotype. The resulting BCR-ABL gene is translated into a fusion protein known as p210 because it has a molecular weight of 210 kDa and has tyrosine kinase activity which stimulates cellular growth. Imatinib mesylate (Gleevec) is a specific and potent inhibitor of the BCR-ABL tyrosine kinase which gives hematologic and cytogenetic results in CML patients during the chronic phase (1).

Imatinib mesylate (Gleevec) is the most successful among a new generation of specific inhibitors of signal transduction. It inhibits the BCR/ABL tyrosine kinase activity by competing with ATP at the ATP binding site of BCR/ ABL, leading to decreased phosphorylation on the tyrosine activity (2). Imatinib is easy to administer orally, and has relatively few side effects. The drug is rapidly absorbed, reaching a maximum plasma concentration 2-4 hours after oral administration . It is metabolized by the liver, mainly via the cytochrome P 450, and primarily eliminated via feces. Response to therapy is defined as hematological and cytogenetic remissions and clinical trials of imatinib mesylate have shown promising results in chronic phase of CML. Here, we analyze the response rate of imatinib mesylate in chronic phase of chronic myeloid leukemia and the significance of Sokal score (3,4).

Methods

From April 2011 to April 2013, 70 patients were analyzed, all diagnosed at the Haematological Service and Genetic Service of University Hospital Center "Mother Theresa" with myeloid leukemia in chronic phase. Eligible patients should not have received treatment for CML before and were randomly assigned to receive imatinib as the initial therapeutic treatment ambulatory at a dose of 400 mg orally per day (5). Results were determined by clinic examination, analysis of peripheral blood and presence of Philadelphia chromosome. Patients were allowed to cross over to the other treatment group if they did not achieve either a complete hematologic response after 6 months of therapy, or a major cytogenetic response after 12 months; if they had a relapse or an increase in white cell count or could not tolerate treatment (6). All patients underwent a complete physical examination and the baseline spleen size was recorded. Complete hematological responses (CHR) were defined as normalization of the peripheral leukocyte count when $< 10 \times 10^9/L$ and when platelets $< 450 \times 10^9/L$ without peripheral blasts, promyelocytes and myelocytes, while cytogenetic response was based on the proportion of the Ph-positive metaphases among at least 25 metaphases. Responses were defined as complete cytogenetic response CCR (0% Ph-positive metaphases), partial cytogenetic response PCR (Ph-positive 1-35%), minor cytogenetic response MCR (35-65% Ph-positive) and the rest of the other responses were merged in a single category named no-cytogenetic response ($> 65\%$ Ph positive metaphases). Major cytogenetic response was characterized as combination of both complete and partial cytogenetic responses. Cytogenetic response was not assessed in patients with overt hematologic progression (7). Sokal score was applied in patients for risk stratification at the beginning of the study by using four clinical variables: age, size of spleen, percentage of blast cells and platelet count. The hazard ratio (Sokal score) was calculated by entering data in the following equation:

$$\text{Exp } [0.116 (\text{age} - 43.4)] + 0.0345 (\text{spleen size} - 7.51) + 0.188 \\ [(\text{platelets}/ 700)^2 - 0.563] + 0.0887 (\text{blast } \% - 2.10)$$

This classification divides patients into three groups: low risk group (Sokal score <0.8), intermediate risk (Sokal 0.8-1.2) and high risk group in which Sokal score was >1.2 (8).

All statistical analysis was computed with SPSS statistical software (version 13.0.1). Data was presented as mean or median values and percentages. Response rate was checked overall and according to Sokal scoring system.

Results

A total of 70 patients were registered over a period of two years. The average age at the beginning of

the study was 48 years old (range, 18-72 years old); among these 41 were males and 29 were females. Patients were classified into prognostic groups using the Sokal formula at the time of diagnosis. 51 (72%) of patients had Sokal score < 0,8 which means they were in the low risk group. The intermediate risk group was comprised of 13 (18 %) patients (Sokal score 0,8-1,2) and 6 (8 %) were high risk (Sokal score > 1,2). 64 patients (91%) of 70 who were started on imatinib mesylate achieved complete hematological response. The overall response rate of imatinib mesylate in chronic phase is described in table 1.

Table 1. Response rate of imatinib mesylate in chronic phase of chronic myeloid leukemia

Response	Number	Percentage
Complete hematological response (CHR)	64/70	91
Cytogenetic response		
Complete (CCR)	38/64	59
Partial (PCR)	12/64	18
Minor	10/64	15
No response	4/64	6
Major (CCR+PCR)	50/64	78

Among 51 valuable cases with low Sokal score, complete hematological response was observed in 50 cases, 29 patients had complete cytogenetic response and 39 had major cytogenetic response. The other responses are described in table 2 and analysis of Sokal score, age and achievement of major cytogenetic response are described in table 3.

Table 2. Response of Imatinib mesylate according to Sokal risk group

Risk group	CHR	CCR	PCR	Not valuable
Low – 51(72%)	50	29	10	1
Intermediate – 13 (18%)	11	8	1	2
High – 6 (8%)	3	1	1	1

Table 3. Analysis of Sokal score, age and achievement of major cytogenetic response

Variable	Evaluation patients (number)	Major cytogenetic response n (%)
Age, years		
<40 years	16	11 (68%)
≥40 years	54	39 (72%)
Sokal risk group		
Low	50	39 (78%)
Intermediate	11	9 (81%)
High	3	2 (66%)

There were significant differences in the rates of cytogenetic response according to the scoring system devised which divides patients with CML into low-risk, intermediate-risk, and high-risk groups. In patients who were deemed to be at low risk on the Sokal scoring system, the rate of major cytogenetic response was 78%; the rate among patients at intermediate risk was 81%, and for those at high risk the rate was 66%. However, the risk of relapse in patients who had a cytogenetic response was not associated with the Sokal score. Imatinib mesylate has changed the current approach to the management of chronic myeloid leukemia. With this therapy the prognostic significance of some clinical variables is changing and few variables have been identified to have an impact on survival. We examined the response rate of imatinib mesylate in chronic phase of chronic myeloid leukemia and tried to find out any correlation between the response and age.

Discussion

This is the first report from Albania compiling response of Imatinib in CML patients. Regarding the results obtained in this study it is important to point out that: Imatinib mesylate is safe and effective first line therapy for chronic phase in the management of CML with tolerable side and adverse effects. The introduction of imatinib in the treatment of CML has brought a high frequency of complete hematological and cytogenetic responses. Although response rate in our series is less than in most studies, however in the current scenario of other available treatment modalities (interferon and bone marrow transplant) it seems to be the most effective treatment option. However, new tyrosine kinase inhibitors are the emerging modalities and should be utilized in the resistant cases. Zhao et al. retrospectively investigated 116 Chinese

patients with chronic-phase CML who had been treated with imatinib (9). The complete hematologic response rate was 94.1% and the complete cytogenetic response rate was 69.6%. Yusuf Bilen investigated 31 Turkish patients with chronic-phase CML who had been treated with imatinib, the complete hematologic response rate was 100% and the complete cytogenetic response rate was 71% (10). The consistent value of the Sokal scoring system in different clinical situations suggests that it measures, at least in part, factors that are intrinsic in leukemia and does not merely reflect the point in its evolution at which the leukemia is diagnosed.

Classical prognostic indicators such as the Sokal score have been used to estimate the relative risk of outcome in chronic phase of chronic myeloid leukemia patients, based on age, spleen status, platelet count and the proportion of blood myeloblasts noted at diagnoses. A low Sokal score predicts a higher hematologic as well as cytogenetic response in patients during chronic phase. We found that substantial numbers of patients in our series were in intermediate or high risk groups; this might be because of late diagnosis. In our study lower response rate in early chronic phase and even in young ages, is probably due to small sample size or because substantial number of patients were in high or intermediate risk group according to Sokal score. Prognostic relevance is also attributed to cytogenetic abnormalities and the degree and timing of hematologic and cytogenetic responses to treatment. Although the introduction of imatinib has to some extent attenuated the predictive value of these indices, the Sokal score remain the only validated predictors of response in newly diagnosed patients. Ongoing assessments allow patients who are not responding optimally to be considered for alternative treatment strategies.

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Characteristics of Tularemia in Kosovo during the period 2006-2011

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Abstract

Aim: First cases of tularemia in Kosovo were confirmed in 2000. During the 2000-2002 epidemic outbreak over 600 cases occurred whereas in 2010 over 320 tularemia cases were reported. Our aim was to present the epidemiological, clinical and diagnostic characteristics and treatment of patients with tularemia treated in the Clinic for Infectious Disease at University Clinical Center of Kosovo, during 2006-2011.

Methods: A total of 100 patients were examined. Medical records data including anamnesis, clinical examinations, laboratory tests and treatment were analyzed.

Results: Mean age of patients was 23.7 years. The average hospital stay was 15.7 days/patient. All patients were from rural areas and 66% of them had access only to well water. The predominant manifestation of the disease was the glandular form whereas 19% and 17% of cases presented pharyngeal and pulmonary forms too, respectively. High Erythrocyte Sedimentation rate was recorded in 95% of patients. 51% of cases had slight anemia and 47% had leukocytosis. Agglutination test in all cases was positive. The Polymerase Chain Reaction test was positive in all taken samples and *Francisella tularensis* subspecies *holartica* was isolated as putative agent. Besides Gentamycin (88%) and Streptomycin (12%), incision and drainage of lymph nodes as accessory therapy was applied in 51% of patients.

Conclusion: Tularemia still represents a public health problem in Kosovo. The glandular form of the disease predominates. Incision and drainage of inflamed glands as accessory therapy has shown to be a good method of treatment for severe forms of disease in combination with antimicrobial therapy.

Keywords: agglutination test, incision and drainage, Kosovo, PCR, tularemia.

Introduction

Tularemia, a zoonotic disease caused by the highly infective, virulent, nonsporulating gram-negative coccobacillus *Francisella tularensis*, is found throughout most of the Northern Hemisphere in a wide range of animal reservoir hosts (1-6). In addition, the organism can be isolated from contaminated environmental sources such as water and mud. It is transmitted to humans by various modes, including direct handling of infectious carcasses, ingestion of contaminated food or water, arthropod bites, or inhalation of infectious dusts or aerosols. Person-to-person transmission is not known to occur (7). In January 2000, the Kosovo Institute of Public Health (IPH) in Prishtina implemented a new surveillance system for 20 communicable disease syndromes. On 22 March 2000, a public health physician in western Kosovo reported a cluster of patients with an unusual syndrome of fever, pharyngitis, and marked cervical lymphadenitis. Tularemia was clinically suspected, and the diagnosis was serologically confirmed on April 14 at the World Health Organization (WHO) regional reference laboratory in Rome. Active case-finding identified other patients at multiple sites in Kosovo who in the previous 6 months had a similar syndrome. Public health records from 1946 disclosed no prior reports of tularemia in Kosovo, but the disease has been reported, although infrequently, from other areas of Yugoslavia and other Balkan states (7). Tularemia has never before been documented in Kosovo in clear clinical picture or atypical form until the first cases of the disease were diagnosed in the south-western Kosovo, in Gjakova region, in April 2000. The disease had spread extensively: 22 cases were from Brovina village and they had consumed water from the local water supply of the village as well as one case each from villages Skivijan, Batuse and Korenica who had direct connections to the source of infection in Brovina (3,8,9). In total during the period of 2000-2010 in Kosovo there were reported 1221 cases with tularemia, respectively 5.2 cases per 100,000 inhabitants (8). Natural appearance of tularemia is rare. Its outbreaks have been documented in war situations including one in 1942 during the Battle of Stalingrad. The reporting of hundreds of cases in Kosovo indicate that the increased risk is associated

with sensitive environments, for example those areas in which agriculture, water and sanitation conditions are severely disturbed in general (3).

The purpose of this study was to present and analyze the epidemiological and clinical data of tularemia disease in Kosovo during the period of 2006-2011.

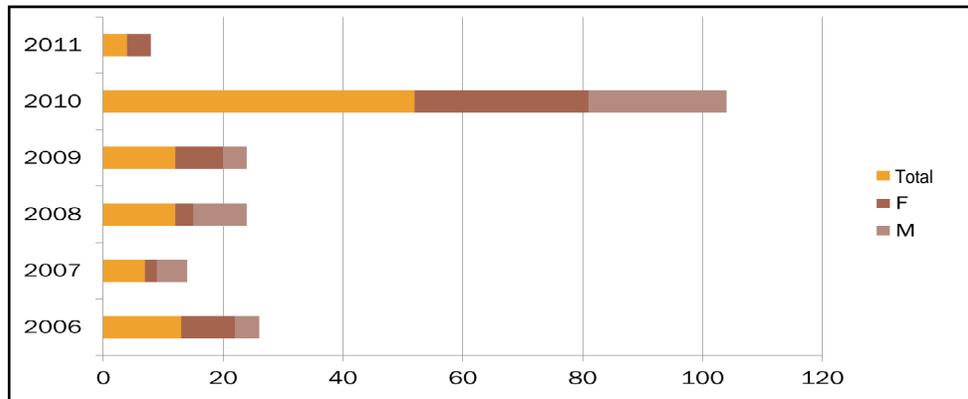
Methods

We have analyzed all patients diagnosed with tularemia and treated in the Clinic for Infectious Disease at University Clinical Center of Kosovo (UCCCK), during the period of 2006-2011. Main inclusion criteria were the diagnosis of tularemia from the medical chart and being a Kosovo resident. In total 100 patients, from which 47 children, have been included in the study. Data from medical records including anamnesis of the disease, clinical examination, laboratory tests and treatment were analyzed. Serological test of agglutination was performed for all cases and also the Polymerase Chain Reaction (PCR) test for three samples taken from the wounds of three patients was performed in the National Institute of Public Health in Ljubljana, Slovenia. The main method for the confirmation of the diagnosis of disease was the serological examination.

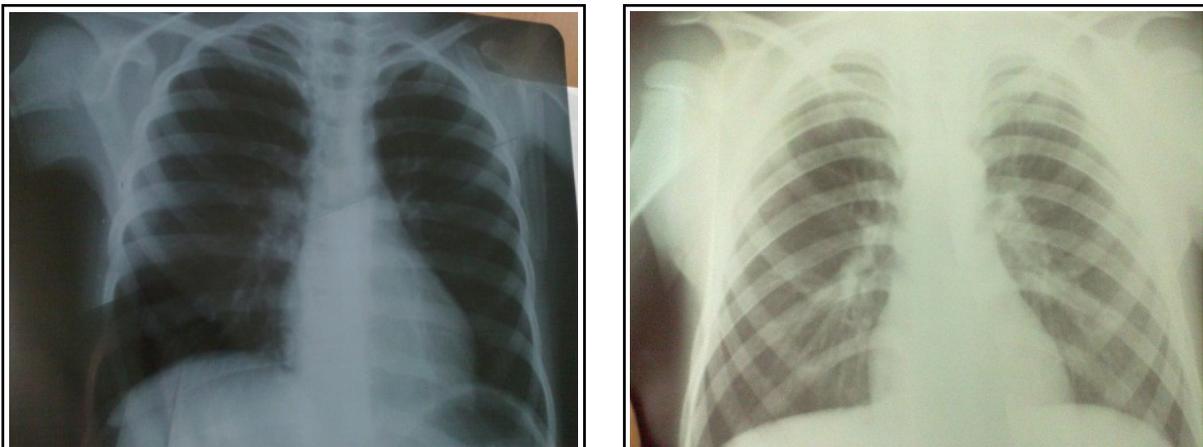
Data processing was done with the statistical package InStat 3. The structure index, the arithmetic mean, standard deviation, minimum and maximum values are calculated. For testing parametric data the student test was used, while for non parametric data the Mann Whitney test and Kruskal Wallis tests were employed. Also Fisher's exact test and chi square test was used to analyze categorical variables. Presentation of data is done through tables and graphs.

Results

The average age of patients was 23.7 years and 46% of patients were under the age of 18. The average hospitalization stay per patient was 15.7 days. All patients were living in rural areas and 66% of them reported water supply only wells. 55% of patients were females. The largest number of patients (52 in total) was treated during the year 2010 (Graph 1). The majority of cases (80%) were hospitalized during winter period (December-February).

Graph 1. Total number of cases by gender during the years

Regarding clinical manifestations, glandular form of tularemia was predominant and found in 97% of cases. Figure 1 visualizes such form of the disease. In 19% of cases and 17% of cases the pharyngeal and pulmonary form (Figure 2) of the disease was present too, respectively. 2% of patients had ulceroglandular form, 1% oculoglandular form and 3% of cases manifested typhoid form.

Figure 1. Clinical forms of tularemia**Figure 2. Pulmonary radio images of patients with tularemia (showing bronchopneumonia)**

The high temperature was present in 100% of cases, lymph gland swelling in 97%, phlegm in 93%, sore throat in 89% and fever in 81% of patients (Table 1).

Table 1. Clinical symptoms of the disease by gender

Symptoms	Females		Males		Total*		P-value†
	Number	Percentage	Number	Percentage	Number	Percentage	
Temperature	55	100.0	45	100.0	100	100.0	1.00
Sweating	19	34.5	23	51.1	42	42.0	0.142
Pain	50	90.9	39	86.7	89	89.0	0.723
Apathy	46	83.6	30	66.7	76	76.0	0.08
Fever	31	56.4	20	44.4	51	51.0	0.324
Swelling of the glands	53	96.3	44	97.7	97	97.0	1.00
Lymph Gland induration	13	23.6	14	31.1	27	27.0	0.541

* The total number of patients with the given symptom.

† P-value from the chi square test.

The laboratory data: Increased sediment of erythrocytes (SE) has been examined in 95% of patients, middle anemia was detected in 51% of cases and leukocytosis was present in 47% of cases.

Agglutination test was positive at the second week in 91% of patients. As shown in Table 2, in 9% of cases agglutination test was negative after two weeks, while during the second time after 4 weeks test has been positive. The first agglutination test titer was 1: 80 in 4% of cases, 1:160 at 2% of cases, and 1:320 in 74% of all cases.

Table 2. Level of the titer by weeks

Level of titer	Negative	1:80	1:160	1:320	1:1280	1:2500	1:5100	Positive	Total
I-II	9*	4	2	74	3	4	1	3	100
After week IV	1	2	3	61	0	1	2	30	100

* Number of patients with the respective level of titer. In this case the absolute number coincides with the respective percentage as there are 100 patients under study.

In the second testing after the first month: in one case agglutination test was negative, and in 61 cases test was positive with agglutination titer of 1:320. Diagnosis was confirmed by agglutination test in almost all cases (99%). Only in one case the diagnosis was first set by histopathological analysis, which was later confirmed with agglutination test (1,2,3,4). During the second test all samples were positive. For the first time in Kosovo, the examination of Polymerase Chain Reaction (PCR) test was positive in all three samples taken from wounds of three patients (100%). In all three examined samples

Francisella tularensis subspecies holartica was isolated as causative agent of tularemia.

Regarding the therapy, patients were treated with antibiotics: Gentamicin, Streptomycin, Erythromycin, Bactrim and Ampicillin. Gentamicin was applied in 88 cases (88%), while in 12 cases (12%) it was applied Streptomycin. In addition, in 6 cases (6%) other antibiotics were administered as well (Table 3). Incision and drainage of lymph nodes as accessory therapy was applied in 51% of patients, who were of older age, with long incubation and severe forms of the disease.

Table 3. Application of the treatment therapy

Medications	Gentamycin	Streptomycin	Other antibiotics	Total
No. of patients with basal therapy	88*	12	6	100
No. of patients with recidivist therapy	11	21	0	32

* Number of patients with the respective level of titer. In this case the absolute number coincides with the respective percentage as there are 100 patients under study.

Discussion

Tularemia is an epidemic disease in Kosovo, which occurs in sporadic forms over the years. In Kosovo the mean incidence of tularemia during 2006-2011 was 5.2 / 100,000 inhabitants, which is comparable to that in Sweden for the same period (3.2 per 100,000 inhabitants), which is known to be endemic for tularemia, but this incidence is much higher than that in Germany (0.013 per 100,000 inhabitants) (8). A study done in Norway reports that the number of cases with tularemia in 2010 was 1.4 cases per 100 000 inhabitants (10), while another study reports that in U.S. the number of cases with tularemia was 0.6 / 100 000 inhabitants during the period of 2001-2010 (9).

All patients treated in our study are from rural areas which is in accordance with reports that tularemia is a disease that is more common and occurs in people who live in rural areas (3,4,7,8).

The social epidemiological conditions are important factor for transmission of tularemia. In our study 66% of patients reported that their only supply with drinking water is from wells. A study from Bulgaria reports that the source of infection with tularemia was food and water contaminated from rodents (11). In our study most of the cases (80%) were hospitalized during the winter period (December-February), which is comparable to the reports of the cases in Turkey which mostly occurred during Autumn-winter period (3,12,13).

The predominant clinical signs of patients in our study were fever 100%, swelling of the lymph glands 97%, lethargy 76%, neck pain 89%, and sweating 42%. In a study report from Turkey, sore throat was present in 100% cases, temperature 93%, myalgia 100% lymphadenopathy 100%, and pharyngeal hyperemia 85% (14).

In our study, 19% of patients had oropharyngeal manifestation of tularemia. Oropharyngeal form of the disease was common in a study report from Turkey: in epidemics that occurred between 1936

and 2004, 387 out of 507 cases or 77% are referred like oropharyngeal forms (15). In another study in the city of Bursa in Turkey, 83% of patients had oropharyngeal form also. (16).

In our study 17% of cases had pulmonary manifestations. In one review in America, ulcer glandular tularemia was accompanied with pneumonia in 30% of cases (17).

Diagnosis was confirmed by agglutination test in almost all cases (99%). Only in one case the diagnosis was put by histopathological examination, which later was confirmed with agglutination test, too. During the first test 76% of samples were positive, 1:320 in 74%, and during the second test all samples were positive. In a study report in America all results of the first test were negative (1:40), but results of tests repeated after 14 days have been all positive, 1:320 (18).

For the first time in Kosovo, examination of Polymerase Chain Reaction (PCR) test was positive in all three samples taken from wounds of three patients (100%) and *Francisella tularensis subspecies holartica* was isolated as causative agent of tularemia. Helvacı has isolated the bacteria in 49% of his patients (16), while Bevanger has isolated the bacteria only in one of 57 patients (19).

In addition to treatment with antibiotics (88 cases were treated with Gentamicin, only 12 cases were treated with Streptomycin and 6 cases with other antibiotics), we applied incision and drainage of lymph nodes as accessory therapy in 51% of patients, who were of older age, with long incubation and severe forms of the disease. Although the literature points out the risk of staff infection during the application of the incision and drainage of lymph nodes interventions (1-6), we haven't experienced such cases during treatment of our patients. Therefore, it may be concluded that we found the incision to be a good method for treating severe forms of tularemia in combination with antimicrobial therapy.

Conclusion

Tularemia continues to be one of the diseases that pose a public health problem in Kosovo. Glandular form is predominant manifestation of the disease. (PCR) test was positive in all three samples taken from wounds of three patients (100%) and

Francisella tularensis subspecies holarctica was isolated as causative agent of tularemia in Kosovo. Incision and drainage of the inflamed glands as accessory therapy has shown to be a good method of treatment for severe forms of disease in combination with antimicrobial therapy.

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Distribution of primary health care physicians in urban and rural areas of Albania during the period 2000-2012

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Abstract

Aim: The aim of this study was to describe the distribution of primary health care (PHC) physicians in urban and rural areas of Albania in the past decade.

Methods: We reviewed the number of PHC physicians (per 10,000 population) in each of the 36 districts of Albania separately for urban areas and rural areas for the period 2000-2012. The information on the number of PHC physicians and the population size in each district for the period under study was collected from the files of the Health Insurance Fund. Mann-Kendall test was used to test for linear trend in the variation of the number of PHC physicians in both urban and rural areas of Albania.

Results: In urban areas, there was evidence of an overall decrease in the number of PHC physicians (per 10,000 population) from 4.4 (in 2000) to 3.9 (in 2012) [linear trend: $P=0.02$]. Conversely, in rural areas, there was evidence of a slight increase from 3.5 (in 2000) to 3.7 (in 2012), with no evidence of a significant linear trend ($P>0.05$). In 2000, the excess number of PHC physicians in urban areas compared with the rural areas was 9 per 100,000 population, whereas in 2012 this difference was only 2 per 100,000 population.

Conclusion: Regarding the distribution of PHC physicians in Albania, the current analysis indicates a significant decrease in urban areas, but only a slight non-significant increase in rural areas of the country. It would be interesting to assess in future analyses the link between the distribution of PHC personnel and health outcomes in urban areas compared to rural areas of transitional Albania.

Keywords: family physicians, general practitioners, primary health care, rural areas, urban areas.

Introduction

The quality of health care services has been convincingly linked to health outcomes in different studies reported in the international literature (1,2). This is particularly the case for primary health care (PHC) services which are considered as the most important level of health care in many developed countries (3). For this very reason, health care professionals operating at the PHC level are very cautious about PHC users' demands, a process which is related to the need for continuous improvement of the quality of PHC services. In addition, the "gate-keeping" function of PHC services implicitly requires a reasonable degree of users' satisfaction.

There is a substantial amount of literature linking the number of PHC professionals (per 100,000 population) with the health outcomes of the served populations and their respective epidemiological profiles (4-6). However, other things being equal, the distribution of PHC professionals is also contingent on the demographic profile (age, sex and place of residence) and socioeconomic characteristics of the respective populations (4,7).

The issues related to PHC services are especially important and relevant for the former communist countries of the Western Balkans including Albania, a country which is currently undergoing profound reforms in the health sector moving from hospital-based system to the primary health care model (8). Nevertheless, as reported elsewhere, the current health care reforms in Albania face enormous challenges with regard to the effectiveness of the "gate-keeping" system (8).

We have recently reported on the number of PHC visits in the Albanian population for the period 2005-2012 (8). In this article we describe the distribution of PHC physicians in urban and rural areas of Albania in the past decade.

Methods

In this analysis, we reviewed the number of PHC

physicians (per 10,000 population) in each of the 36 districts of Albania separately for urban areas and rural areas for the period 2000-2012. The information on the number of PHC physicians and the population size in each district for the period under study was collected from the files of the Health Insurance Fund.

Mann-Kendall test was used to test for linear trend in the variation of the number of PHC physicians in both urban and rural areas of Albania for the period under investigation. Statistical Package for Social Sciences (SPSS, version, 19.0) was used for the data analysis.

Results

It should be noted that there was no information available for the years 2001 and 2002. The number of PHC physicians per 10,000 population in urban areas and rural areas for each district of Albania is presented in Table 1 (for the year 2000) and in Table 2 (for the year 2012). At the start of the analysis (year 2000), the highest number of PHC physicians (per 10,000 population) in urban areas was evident in Durrës (5.5), Korça (5.4), Has and Tirana (5.2 for both). Conversely, the lowest number of PHC physicians in urban areas was in the districts of Kolonja (no physicians at all), Tropoja and Bulqiza (1.8 for both) followed by Delvina (2.2). As for the rural areas, the highest number of physicians was evident in Tirana and Durrës (5.1 in both), whereas the lowest number was in Delvina (1.3), Peqin (1.7) and Bulqiza (1.8).

On the other hand, at the end of the period under investigation (year 2012), the highest number of physicians (per 10,000 population) operating in urban areas was evident in Skrapar (4.6) followed by Berat (4.5), whereas the lowest number was in Delvina (1.5) and Bulqiza (2.4). In rural areas, the highest number of physicians was noted in Përmet (5.1) followed by Kolonja (5.0), whereas the lowest number was in Bulqiza (2.3) and in Peqin (2.4).

Figure 1 presents the overall distribution of PHC physicians in urban areas and rural areas of Albania for the period 2000-2012. In urban areas, there was

Table 1. Number of PHC physicians in urban areas and rural areas of Albania in 2000 by district

District	Urban areas			Rural areas		
	Population	No. physicians	No. physicians per 10000 population	Population	No. physicians	No. physicians per 10000 population
Berat	73422	30	4.1	86957	21	2.4
Kuçovë	28375	12	4.2	18429	6	3.3
Skrapar	20979	6	2.9	25281	7	2.8
Peshkopi	19695	5	2.5	84307	20	2.4
Bulqizë	17096	3	1.8	38550	7	1.8
Burrel	30641	14	4.6	45527	17	3.7
Durrës	154936	85	5.5	62914	32	5.1
Krujë	38249	14	3.7	34415	14	4.1
Kavajë	44166	12	2.7	61091	18	2.9
Elbasan	134834	51	3.8	123303	38	3.1
Peqin	9014	3	3.3	28719	5	1.7
Librazhd	15509	7	4.5	68024	28	4.1
Gramsh	12850	4	3.1	24818	12	4.8
Fier	106150	46	4.3	135892	44	3.2
Lushnjë	55591	17	3.1	117091	35	3.0
Mallakastër	12978	5	3.9	37618	11	2.9
Gjirokastër	33922	15	4.4	37797	16	4.2
Tepelenë	18700	8	4.3	31600	8	2.5
Përmet	12446	6	4.8	25175	12	4.8
Korçë	85670	46	5.4	101668	48	4.7
Kolonjë	13057	0	0.0	16364	4	2.4
Devoll	8154	3	3.7	34173	13	3.8
Pogradec	34620	15	4.3	53093	24	4.5
Kukës	20072	10	5.0	49645	15	3.0
Has	5800	3	5.2	8209	3	3.7
Tropojë	11403	2	1.8	26867	11	4.1
Lezhë	15781	8	5.1	62253	19	3.1
Mirditë	24075	9	3.7	24844	5	2.0
Laç	51286	16	3.1	17087	6	3.5
Shkodër	99128	45	4.5	122299	36	2.9
M. Madhe	8614	4	4.6	44892	16	3.6
Pukë	12842	6	4.7	26172	7	2.7
Vlorë	122348	59	4.8	67266	31	4.6
Sarandë	34640	11	3.2	45896	10	2.2
Delvinë	13578	3	2.2	15731	2	1.3
Tiranë	449554	234	5.2	163059	83	5.1
Totali	1,850,175	817	4.4	1,967,026	684	3.5

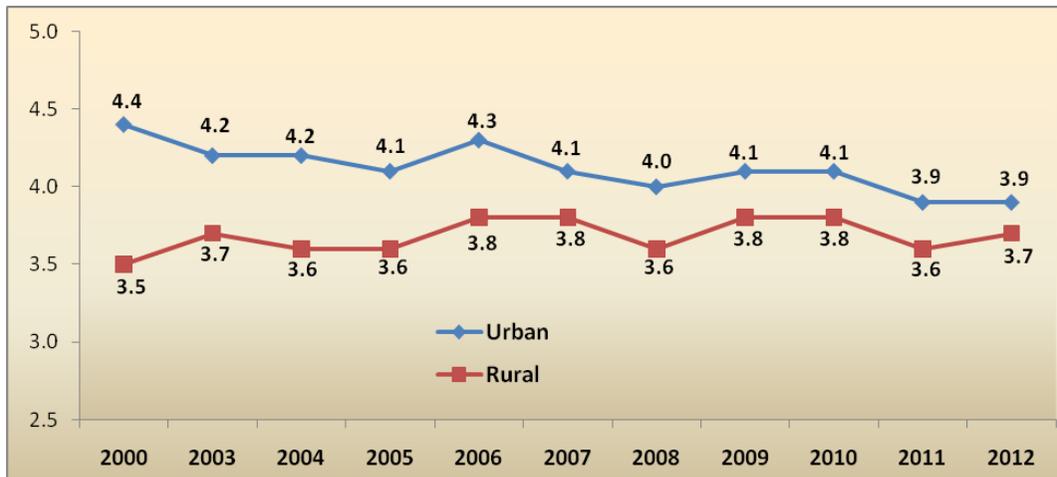
Table 2. Number of PHC physicians in urban areas and rural areas of Albania in 2012 by district

District	Urban areas			Rural areas		
	Population	No. physicians	No. physicians per 10,000 population	Population	No. physicians	No. physicians per 10,000 population
Berat	65,008	29	4.5	77,999	30	3.8
Kuçovë	27,647	12	4.3	19,002	7	3.7
Skrapar	15,310	7	4.6	15,982	5	3.1
Peshkopi	19,187	5	2.6	65,418	17	2.6
Bulqizë	12,512	3	2.4	30,502	7	2.3
Burrel	29,446	12	4.1	36,645	15	4.1
Durrës	184,484	80	4.3	115,484	47	4.1
Krujë	42,336	17	4.0	37,327	15	4.0
Kavajë	47,647	16	3.4	63,718	25	3.9
Elbasan	158,912	60	3.8	129,842	43	3.3
Peqin	9,747	4	4.1	29,445	7	2.4
Librazhd	17,012	6	3.5	59,558	27	4.5
Gramsh	14,557	6	4.1	23,380	10	4.3
Fier	115,654	47	4.1	135,955	52	3.8
Lushnjë	57,961	24	4.1	112,202	36	3.2
Mallakastër	12,007	5	4.2	32,937	11	3.3
Gjirokastrë	37,122	11	3.0	43,384	14	3.2
Tepelenë	15,066	4	2.7	24,217	9	3.7
Përmet	13,227	5	3.8	19,523	10	5.1
Korçë	95,552	36	3.8	101,255	40	4.0
Kolonjë	9,876	5	5.1	12,017	6	5.0
Devoll	9,277	4	4.3	30,184	10	3.3
Pogradec	32,452	12	3.7	52,562	21	4.0
Kukës	21,698	9	4.1	39,227	14	3.6
Has	7,589	2	2.6	13,761	4	2.9
Tropojë	8,203	3	3.7	21,365	10	4.7
Lezhë	24,564	9	3.7	75,396	31	4.1
Mirditë	20,334	9	4.4	15,709	5	3.2
Laç	61,728	22	3.6	12,581	5	4.0
Shkodër	117,373	44	3.7	115,702	35	3.0
M. Madhe	7,642	2	2.6	41,525	16	3.9
Pukë	12,650	5	4.0	25,950	7	2.7
Vlorë	151,856	60	4.0	74,344	33	4.4
Sarandë	40,948	11	2.7	53,956	12	2.2
Delvinë	13,161	2	1.5	16,167	5	3.1
Tiranë	648,563	262	4.0	225,824	91	4.0
Totali	2,178,308	850	3.9	2,000,045	732	3.7

evidence of an overall decrease in the number of PHC physicians (per 10,000 population) from 4.4 (in 2000) to 3.9 (in 2012) [linear trend: $P=0.02$]. Conversely, in rural areas, there was evidence of a slight increase from 3.5 (in 2000) to 3.7 (in 2012), with no significant linear trend ($P>0.05$).

Overall, in 2000, the excess number of PHC physicians in urban areas compared with the rural areas of Albania was 9 per 100,000 population, whereas in 2012 this difference was only 2 per 100,000 population.

Figure 1. Overall number of PHC physicians (per 10,000 population) in urban areas and rural areas of Albania for the period 2000-2012



Discussion

Our analysis regarding the distribution of PHC physicians in Albania for the period 2000-2012 revealed a significant decrease in urban areas, but only a slight non-significant increase in the rural areas of the country. Essentially, there was a steady (albeit weak) decrease in urban areas in most of the districts of Albania, with no evidence of significant regional variations. In rural areas, the increase in the number of PHC physicians was quite small, with no significant regional variations for the period under investigation. However, the small increase in the number of PHC physicians in rural areas coupled with the decrease in the urban areas contributed to a steady reduction in the excess number of PHC physicians between urban areas (more privileged areas with a higher access to health care services) and rural areas (traditionally disadvantaged and underserved areas). Therefore, the current analysis supports the presence of a narrower gap in urban-rural disparities regarding the distribution of PHC personnel in Albania.

Several studies have reported a positive association between patient satisfaction and the number of PHC personnel (9). The patient satisfaction with the quality of PHC services has also been more directly linked to health outcomes (10,11). Furthermore, different studies have reported a positive relationship between the number of PHC professionals (per 100,000 population) and morbidity outcomes of the populations (4-6). Nonetheless, as stated earlier, the

distribution of PHC professionals, among other things, depends also on the demographic profile and socioeconomic characteristics of the respective populations (4,7).

From this point of view, it would be interesting to assess in future analyses the link between the distribution of PHC personnel and health outcomes in urban areas compared to rural areas of transitional Albania. Also, it is important to conduct a specific analysis by different demographic and socioeconomic characteristics of the Albanian population in both urban areas and rural areas. This would enable assessment of the putative link between the distribution of PHC physicians and demographic factors and socioeconomic characteristics of the served populations in different regions of Albania. Hence, a limitation of our analysis regards the lack of disaggregated data on the demographic and socioeconomic profile of urban areas and rural areas in each of the districts of Albania. From this perspective, future studies in Albania should explore in more depth the distribution of PHC professionals by specific demographic and socioeconomic characteristics of the population. Subsequently, the distribution of PHC physicians and other health personnel (nurses and midwives) should be linked to specific health outcomes of the population including a detailed list of mortality and morbidity indicators. In conclusion, our analysis indicates a significant decrease in the number of PHC physicians in urban

areas, but only a slight non-significant increase in the rural areas of Albania. Yet, the small increase in the number of PHC physicians in rural areas along with the decrease in the urban areas contributed to a steady reduction in the excess number of PHC

physicians between urban and rural areas. From this point of view, our findings provide evidence of a narrower gap in urban-rural disparities regarding the distribution of PHC personnel in Albania.

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Epidemiology of congenital malformations in Albania during 2011-2012

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Abstract

Aim: The aim of this study was to present an overview of the regional distribution of congenital malformation (CMs) in Albania in order to provide researchers and policymakers with scientific information for implementing appropriate CMs prevention policies and consider local health care implications

Methods: This is a cross-sectional study implemented on national level. The data available for this study were extracted from the CM surveillance system of the National Institute of Public Health, during 2011-2012. Absolute numbers and frequencies of CMs according to mothers' and birth-related characteristics were reported. Chi square test was used to check for any statistically significant difference.

Results: The total reported rate of CMs per 1000 live births was 15.2 in 2011 and 14.3 in 2012. In both years, the majority of CMs cases were males. The most frequent CM affected the cardiovascular system. There was a significant decline in the proportion of reported CMs of central nervous system and chromosomal defects between 2011 and 2012 (9.6% vs. 5.8%, $P=0.026$ and 10.6% vs. 6.6%, $P=0.025$, respectively). No significant associations were observed with mother and birth-related characteristics. A not straight-forward trend could be offered in regional level.

Conclusions: The present survey offered for the first time a more detailed overview of CMs distribution in Albania. Despite the novelty of information, the issues related to under-reporting continue to be a considerable problem towards correct estimation of CMs rates, prevalence and risk factors.

Introduction

More than 20 million infants are diagnosed with congenital malformations (CMs) every year worldwide of which approximately 8 million experience serious ones (1). Despite efforts to control and possibly to treat these conditions, nearly 3.2 million of them will have to cope with disabilities for the rest of their lives. These children will suffer from various degrees of mental, physical, visual and/or other types of disabilities. Certain congenital malformations can be lethal. Congenital malformations are the leading cause of infant mortality in the United States. Notwithstanding the significant medical progress in understanding the origin of CMs, in around 50% of cases the respective putative agents remain still unknown. Globally, the most prevalent congenital malformations comprise cardiovascular and neural tube defects as well as the Down syndrome (1,2). Despite being a widespread and global problem affecting virtually all human communities, CMs' impact affects disproportionately the middle and low-income countries. Indeed, over 90% of CMs and CMs related deaths occur in these countries (3). In the United States, the prevalence of severe CMs is around 3% and their treatment and care swallow huge amount of money every year (4). The European surveillance of congenital anomalies (EUROCAT) shows that, in Europe, approximately 2% of infants develop a congenital malformation that can affect their ability to survive or function normally. About 2% of these infants will die spontaneously during their growth, and approximately 14% will be terminated by choice.

Among all CMs, those affecting the limbs, heart and spinal cord represent together about 50%. Other frequently observed congenital malformations comprise face, gastro-intestinal tract and sexual organs' defects. About three infants in every 2000 are affected by major chromosomal malformations, such as Down syndrome (5,6). In Europe the prevalence of major CMs was 23.9 per 1,000 live births during 2003-2007 and 80% of them were observed among live born babies. Congenital malformations of heart were the most common non-chromosomal defects (7). The prevalence of congenital malformations from multiple births doubled from 2004 to 2007, an outcome from a registry-based study in fourteen European countries (8).

Numerous recent studies on trends in the prevalence of CMs in Asia, USA, Canada and Europe have shown that pregnancy terminations and prenatal diagnosis rates have steadily increased over the last two decades even though the overall total prevalence of major congenital malformations has been unchanged (9-11). However, different trends were observed by other studies that showed a decline in the prevalence of non-chromosomal CMs and an increase of chromosomal ones (12,13). A higher overall rate of congenital malformations is reported in males and black infants (1,14).

In Albania the rate of congenital malformations was 14.0 per 1000 live births in 2010. In Tirana, the capital of Albania, the rate of congenital malformations for the years 2009 and 2010 was 23.7 and 24.1 per 1000 live births, respectively. In 2010 the most common reported CMs in Albania were those affecting the cardiovascular system, the musculoskeletal system and the mouth with the digestive system (15). Despite some information available (only recently, as shown above), there is no research work referring to the distribution and regional prevalence of CMs in Albania. To our best knowledge, this is the first study assessing the distribution of CMs by different socio-demographic and birth related characteristics in Albania. In this context, the aim of this study was to present an overview of the regional distribution of CMs in Albania in order to provide researchers and policymakers with scientific information for implementing appropriate congenital malformations prevention policies and consider local health care implications.

Methodology

This is a cross-sectional study implemented on national level. The data available for this study were extracted from the congenital malformations surveillance system of the Department of Epidemiology and Health Systems in the National Institute of Public Health. The congenital malformations surveillance system includes all congenital malformations identified and reported among live born babies and also congenital malformations identified among stillborn babies for two years, 2011 and 2012. Fetal deaths prior to 20 weeks of gestational age are not included. The congenital malformations

surveillance system only includes reportable congenital malformations (registered in the ICD9 international statistical classification of diseases). The live births data for two years, 2011 and 2012, were extracted from the Statistical Department of the Ministry of Health. The reporting rate for congenital malformations is different across regions and the Department of Epidemiology and Health Systems estimates that the surveillance captures over 80% of all congenital malformations diagnosed at the time of birth. The establishment of this surveillance system, the way it works and the type of data that it collects has been described elsewhere (16).

The data were analyzed using the SPSS "The Statistical Package for Social Science 15th Edition (SPSS Inc.) software. Analysis was performed as follows: frequencies were run for all variables to identify missing data and outlier values. The congenital malformations data were analyzed by the specific socio-demographic characteristics (region, district, locality of mother's residence, mother's age, mother's education and infant's gender). Also the data analyzes was performed about congenital

malformations birth related characteristics (infant's birth weight and vital status).

Results

In Albania, there were 521 and 499 cases of CMs reported for the years 2011 and 2012, respectively. For the year 2011 and 2012 there are 34,297 and 34,974 live births reported.

Approximately 53% of CM cases and 54% of CM cases for the year 2011 and 2012 respectively are rural residents. For the year 2011, 57.2% of CM cases were males and for the year 2012, 63.3% of CM cases were males. In both years approximately 98% of CM cases belong to the white ethnicity. In 2011, the unemployment rate of mothers who gave birth to babies with congenital malformations was 61% in 2012 was 63% (data not shown).

In these two years, the most frequent reported congenital malformations are those affecting the cardiovascular system, gastrointestinal system including oral cavity, musculoskeletal system and those affecting the genital system (Table 1).

Table 1. The distribution of congenital malformations according to the body system affected for the years 2011 and 2012 in Albania

Variable	Years 2011		Year 2012		P-value
	Number	Percentage	Number	Percentage	
Body systems					
The central nervous system (CNS)	50	9.6	29	5.8	0.026*
The eye, ear, face and neck	16	3.1	19	3.8	0.607
The cardio-vascular system	123	23.6	133	26.7	0.279
The respiratory system	6	1.2	6	1.2	1.000
The gastro-intestinal system and oral cavity	71	13.6	84	16.8	0.163
The genital system	65	12.5	76	15.2	0.206
The urinary system	15	2.9	7	1.4	0.132
The musculoskeletal system	98	18.8	84	16.8	0.415
The defects of integument	3	0.6	2	0.4	1.000
The chromosomal defects	55	10.6	33	6.6	0.025
The unspecified defects	19	3.6	26	5.2	0.286
<i>Total</i>	521	100.0	499	100.0	-

* P-value according to Fischer's exact test.

In 2012 in comparison with the year 2011, there is a slight increase of CMs affecting the cardiovascular system, the gastrointestinal system including the oral

cavity and of those affecting the genital system but there is a slight decrease of CMs affecting the musculoskeletal system. All these differences were

not significant (Table 1). In 2012, there is a significant decline of chromosomal defects and of CM cases affecting the central nervous system in comparison with the year 2011.

A description of the most common CMs reported

in 2011 and 2012 is presented in Table 2. The most prevalent CM in 2011 was the Down Syndrome (8.8%) whereas in 2012 the most frequent CM was hypospadias with 11.6% of cases.

Table 2. The most common congenital malformations reported in 2011 and 2012 in Albania

Congenital malformations diagnosis in 2011	Year 2011	Year 2012	Congenital malformations diagnosis in 2012
Down syndrome	46 (8.8)	58 (11.6)	Hypospadias
Unspecified anomalies of genital organs	46 (8.8)	32 (6.4)	Polydactyly
Atresia and stenosis of large intestine, rectum and anal canal	25 (4.8)	30 (6.0)	Down syndrome
Ostium secundum type atrial septal defect	24 (4.6)	28 (5.6)	Ventricular septal defect
Polydactyly	22 (4.2)	28 (5.6)	Atresia and stenosis of large intestine, rectum and anal canal
Ventricular septal defect	20 (3.8)	25 (5.0)	Ostium secundum type atrial septal defect
Other specified anomalies of heart	19 (3.6)	23 (4.6)	Unspecified anomalies of heart
Hypospadias	19 (3.6)	18 (3.6)	Unspecified anomalies of genital organs
Congenital hydrocephalus	18 (3.5)	14 (2.8)	Anomalies of ear causing impairment of hearing
Varus deformities of feet	14 (2.7)	14 (2.8)	Varus deformities of feet
Common truncus	12 (2.3)	13 (2.6)	Cheilopalatoschisis
Anomalies of ear causing impairment of hearing	12 (2.3)	10 (2.0)	Transposition of great vessels

The distribution of CM cases by year of study and mother's and birth-related characteristics were not statistically significant (Table 3). The distribution of CM cases by mother's and birth-related characteristics and by year of study is displayed in Table 3. In both years, approximately 45% of mothers who gave birth to babies with congenital malformations had completed only the secondary education. Among all diagnosed cases with congenital malformations, most of their mothers belong to the reproductive age group. In 2012 there is a lower rate in reporting mother's age rather than in 2011. Regarding the distribution of CM by vital status, in both years the vast majority of CMs was diagnosed in live born babies. In 2012, there is an increase in the proportion of babies born with congenital malformations more than 2500 gram and there is a decrease in that of premature babies (less than 37 weeks) born with congenital malformations, compared with the year 2011 (Table 3).

Table 3. Distribution of CM cases by socio-demographic and birth-related characteristics.

Variable	Year 2011		Year 2012		P-value
	Number	Percentage	Number	Percentage	
Mothers education					
No education	2	0.4	7	1.4	0.916 *
Primary	14	2.7	4	0.8	
Secondary	242	46.4	213	42.7	
High school	136	26.1	131	26.3	
University	71	13.6	61	12.2	
<i>Missing</i>	<i>56</i>	<i>10.7</i>	<i>83</i>	<i>16.6</i>	
Age-group					
15-19 years	19	3.6	17	3.4	0.246
20-24 years	128	24.6	118	23.6	
25-29 years	171	32.8	143	28.7	
30-34 years	128	24.6	80	16.0	
35-39 years	59	11.3	42	8.4	
40-44 years	15	2.9	14	2.8	
>45 years	1	0.2	3	0.6	
<i>Missing</i>	<i>0</i>	<i>0.0</i>	<i>82</i>	<i>16.4</i>	
Vital status					
Fetal death	21	4.0	36	7.2	0.448
Early neonatal death	34	6.5	19	3.8	
Live birth	464	89.1	436	87.4	
Induced abortion	2	0.4	8	1.6	
Birth weight of CMs cases					
<1500 grams	26	5.0	23	4.6	0.173
1500-2500 grams	94	18.0	73	14.6	
>2500 grams	385	73.9	395	79.2	
<i>Missing</i>	<i>16</i>	<i>3.1</i>	<i>8</i>	<i>1.6</i>	
Pregnancy age					
<37 weeks	108	20.7	86	17.2	0.175 †
≥37 weeks	389	74.7	399	80.0	
<i>Missing</i>	<i>24</i>	<i>4.6</i>	<i>14</i>	<i>2.8</i>	

* P-value according to chi-square test (the missing category was not included for this analysis).

† P-value according to Fischer's exact test.

The distribution of CMs by country's regions in 2011-2012 are presented in Table 4. The highest rate of CMs in 2011 was observed in Gjirokaster region (27.4 per 1000 live births), whereas in 2012 the highest rate was registered in Tirana (26.0 per 1000 live births). The lowest rate of CMs in 2011 and 2012 was registered in Shkoder region (3.2 and 1.7 per 1000 live births, respectively).

Table 4. The rate of congenital malformations per 1000 live births by place of residence for the years 2011 and 2012 in Albania.

Regions	Year 2011			Year 2012		
	Number of live births	Number of CMs	Rate (CM/1000 live births)	Number of live births	Number of CMs	Rate (CM/1000 live births)
Berat	1440	24	16.7	1522	15	9.9
Dibër	1487	7	4.7	1541	5	3.2
Durrës	3741	29	7.8	3468	35	10.1
Elbasan	3269	33	10.1	3412	24	7.0
Fier	3447	43	12.5	3611	38	10.5
Gjirokastrë	547	15	27.4	511	10	19.6
Korçë	2238	23	10.3	2185	18	8.2
Kukës	1138	13	11.4	1143	10	8.7
Lezhë	1527	13	8.5	1542	8	5.2
Shkodër	2178	7	3.2	2368	4	1.7
Tiranë	11401	282	24.7	11725	305	26.0
Vlorë	1884	32	17.0	1946	27	13.9
<i>Total</i>	<i>34297</i>	<i>521</i>	<i>15.2</i>	<i>34974</i>	<i>499</i>	<i>14.3</i>

Discussion

This study was performed on secondary data extracted from the congenital malformations surveillance system dataset aimed to identify the rates of congenital malformations by regions and their characteristics. This study shows the overall picture of the distribution of all congenital malformations identified among live born infants, terminated pregnancies and fetal deaths for two years, 2011 and 2012. Congenital malformations were analyzed according to the distribution of socio demographic and birth related characteristics. In 2011 in Albania, the prevalence rate of congenital malformations was 15.2 per 1000 live births and it went slightly down to 14.3 per 1000 live births in 2012. These rates were lower than the rate reported by Global Report on Birth Defects, 2006 (52.9 per 1000 live births) (1). The rates of congenital malformations among regions were higher in 2011 than in 2012, except for Tirana and Durres. The differences in the rates of congenital malformations across regions can be explained somehow by the differences in the reporting of hospitals across regions, differences in diagnosis and use of ultrasound and also to some extent by differences in the population profile (e.g. according to religion, nutrition status) attended in the hospitals and also can partly be explained by the limitation of having only two years for analysis and

not the additional years prior to 2011 (15,17). The regional variations in CM rates from 2011 to 2012 require further investigation. In both years the majority of CMs cases were males. In the present study, the higher proportion of CM among males is not mainly due to genital system malformations. In our survey male infants were over represented among all cases and similar findings were observed in a 10 year study conducted in Atlanta, Georgia, where more than half (54.1%) of congenital malformations were observed also among males. (18) In our study, we didn't have information regarding assisted reproduction technology among newborns, stillbirths and terminated pregnancies, but a previous study conducted in Israel, observed a higher prevalence rate of congenital malformations in multiple births than singletons born with assisted reproduction technology (19). The aim of this study was to show the overall picture of congenital malformations and especially their distribution to different socio demographic and birth related characteristics. But there is need for further investigation in order to see if mother's age, mother's education, ethnicity, birth weight and pregnancy weeks are linked with the onset of the congenital malformations (20,21). In our study the percentage of mothers who gave birth to babies

with congenital malformations that completed the university degree was lower than those who completed the secondary education and high school, and a possible explanation is that highly educated women tend to take care of their health and to visit the physician more often than less educated ones (22). This study included only cases diagnosed within 48 hours after delivery. However, age limit at time of diagnosis may have affected our reported prevalence of birth defects and thus our prevalence rates might have been underestimated because of this limitation. Certain regions are very problematic as they do not report about diagnosed CMs. Also, there is lack of reporting from health centers and this could also have contributed towards a further underestimation of CMs prevalence in Albania.

Cardiovascular malformations were the most frequent malformations in 2011 and 2012, although no significant differences were noticed in general.

Enriching the congenital malformations surveillance system by including congenital malformations among still births and terminated pregnancies (more and less than 20 weeks of gestational age), increasing the age at time of diagnosis of congenital malformations, utilizing active case findings surveillance systems (23) and including both inpatient and outpatient facilities in the surveillance (24), would contribute to the better completion of the database thus leaving little possibility for cases to be routinely missed. Congenital malformations are a significant public health problem since they are relatively common, they lead to disabilities and are a major reason for hospitalization in infancy and childhood (25). Although the data are still considerably incomplete, the variation of the regional disparity in congenital malformations should be of concern, and suggests the need for appropriate public health and medical interventions.

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Primary health care users' perceptions on competencies of their family physicians in Kosovo: Preliminary results from a cross-sectional study

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Abstract

Aim: The aim of this study was to assess the level of skills, abilities and competencies of family physicians from primary health care users' perspective in Kosovo, a post-war country in the Western Balkans.

Methods: In this article we report the preliminary results of a nationwide cross-sectional study, conducted in Kosovo in January-June 2013, including a representative sample of 601 primary health care users aged ≥ 18 years (301 males and 300 females; mean age: 49.1 ± 17.7 years). All participants were asked to assess the level of abilities, skills and competencies of their respective family physicians regarding different domains of the quality of health care. Overall, the questionnaire included 37 items organized into six domains. Answers for each item of the tool ranged from 1 ("novice" physicians) to 5 ("expert" physicians). An overall summary score (including 37 items; range: 37-185) and a subscale summary score for each domain were calculated. Demographic and socioeconomic information was also collected. Cronbach's alpha was used to assess the internal consistency of the instrument, whereas Mann-Whitney's U-test was used to compare the mean scores for the overall scale and each subscale between males and females.

Results: Overall, the internal consistency of the instrument (37 items) was Cronbach's alpha=0.94; it was higher in males than in females (0.95 vs. 0.92, respectively). The overall summary score for the 37-item instrument was 123.7 ± 19.1 ; it was similar in males and females (123.4 ± 20.1 vs. 124.1 ± 18.0 , respectively, $P=0.587$). There was a weak inverse correlation of the overall summary score of the instrument with age of participants and the number of visits to the health center in the past year, but a mild positive correlation with educational attainment and income level.

Conclusions: The preliminary findings from this nationwide survey provide useful information on the level of skills, abilities and competencies of family physicians from primary health care users' standpoint in transitional Kosovo.

Keywords: abilities, competencies, family physicians, general practitioners, primary health care, quality of care, skills.

Introduction

Several studies have reported a positive relationship between patient satisfaction and quality of primary care (1) and health outcomes (2,3). Therefore, in order to meet patients' demands, quality improvement and performance evaluation have currently become fundamental issues in primary health care practice (4). A useful instrument to improve the quality of care is considered the continuous assessment of physicians' performance in order to identify potential gaps in their level of knowledge, skills, abilities and competencies (4,5). For this purpose, there have been developed conceptual frameworks and instruments which help to self-assess and self-determine competency gaps among primary health care professionals (4,5). At the same time, however, it is similarly important to develop measuring tools aiming to assess patients' perceptions regarding abilities, skills and competencies of their family physicians and general practitioners.

In this framework, an international instrument has been recently developed aiming to assess the level of skills, abilities and competencies of family physicians from both physicians' perspective (self-assessment) and from primary health care users' viewpoint (5). This measuring instrument has been already validated in Albania among primary health care users (6) and in general practitioners and family physicians (7). More recently, a cross-cultural adaptation of this tool has been also conducted in Kosovo among primary health users (8) and family physicians (9).

In this context, the aim of the current study was to assess the level of skills, abilities and competencies of family physicians from primary health care users' perspective in Kosovo, a post-war country in the Western Balkans. To meet this end, we employed the validated version of the aforementioned international instrument developed with the support of the European Community Lifelong Learning Program. This cross-culturally adapted tool addresses competency levels of general practitioners and family physicians regarding different domains of quality of health care (4,5).

Methods

Study population

In this article we report the preliminary results of a nationwide cross-sectional study, conducted in Kosovo in January-June 2013, including a representative sample of 601 primary health care users aged ≥ 18 years (301 males and 300 females; overall mean age: 49.1 ± 17.7 years).

Data collection

In this study, we employed an international instrument aiming to assess the level of skills, abilities and competencies of family physicians from primary health users' viewpoint. All participants included in this survey were asked to assess the level of skills, abilities and competencies of their family physicians in regarding the following six essential domains pertinent to the quality of primary health care:

- Patient care and safety (8 items);
- Effectiveness and efficiency (7 items);
- Equity and ethical practice (8 items);
- Methods and tools (5 items);
- Leadership and management (4 items), and;
- Continuing professional development (5 items).

As reported in prior validation studies of the current instrument (6-9), answers for each item of each subscale ranged from 1 ("novice"= physicians have little or no knowledge/ ability, or no previous experience of the competency described and need close supervision or instruction) to 5 ("expert"= physicians are the primary sources of knowledge and information in the medical field).

An overall summary score (including 37 items; range: 37-185) and a subscale summary score for each of the six domains were calculated for all policymakers included in this study.

Demographic and socioeconomic data (age and sex of participants, educational attainment, employment status and income level) and information on the overall satisfaction with the medical encounter and the number of health visits in the past year were also collected.

Statistical analysis

Mean values (and their respective standard deviations [SD]) were used to describe the distribution of age, educational attainment (years of formal schooling), the summary score of the whole instrument (37 items) and the summary scores of each of the six subscales/ domains among survey participants. On the other hand, absolute numbers (and their respective percentages) were used to describe the distribution of sex, income level, employment status, number of health visits in the past year and the overall satisfaction level with medical encounter among primary health care users.

Cronbach's alpha was used to assess the internal consistency of the full scale (37 items) and each of the six subscales of the instrument.

Spearman's rho was used to assess the linear association (correlation) of the overall summary score of the 37-item instrument with the age of participants, educational attainment, income level and the number of visits to the health center in the past year.

Mann-Whitney's U-test was used to assess sex-differences in the mean values of the summary score

of 37-item instrument and the summary scores of each of the six subscales of the tool.

Results

In this nationwide representative sample of 601 primary health care users in Kosovo (50% males and 50% females), the overall mean (\pm SD) age was 49.1 ± 17.7 years (Table 1). Mean age in males was higher than in females (51.6 ± 18.4 years vs. 46.7 ± 16.6 years, respectively). Overall, mean years of educational attainment (years of formal schooling) was 8.8 ± 4.1 years. On average, males had a higher educational level than women (9.7 ± 3.8 years vs. 7.9 ± 4.2 years, respectively). Overall, about 29% of study participants reported a low income level and only 4.5% reported a high income level. There were no sex-differences regarding the self-reported income level. On the whole, 32% of individuals were employed, 42% were unemployed, whereas the remaining 26% were either students or retirees. The degree of unemployment was considerably higher in females compared with their male counterparts

Table 1. Distribution of socioeconomic characteristics and satisfaction with health care services in a sample of primary health care users (N=601) in Kosovo, in 2013

Variable	Men (N=301)	Women (N=300)	Overall (N=601)
Age (years)	$51.6 \pm 18.4^*$	46.7 ± 16.6	49.1 ± 17.7
Educational level (years)	9.7 ± 3.8	7.9 ± 4.2	8.8 ± 4.1
Income level:			
Low	82 (27.2) [†]	90 (30.0)	172 (28.6)
Middle	206 (68.4)	196 (65.3)	402 (66.9)
High	13 (4.3)	14 (4.7)	27 (4.5)
Employment status:			
Employed	121 (40.2)	71 (23.7)	192 (31.9)
Unemployed	78 (25.9)	174 (58.0)	252 (41.9)
Students and retirees	102 (33.9)	55 (18.3)	157 (26.1)
No. health visits in the past 12 months:			
1-2	79 (26.2)	65 (21.7)	144 (24.0)
3-4	104 (34.6)	84 (28.0)	188 (31.3)
5-6	47 (15.6)	76 (25.3)	123 (20.5)
≥ 7	71 (23.6)	75 (25.0)	146 (24.3)
Overall satisfaction with health services:			
Very good/good	223 (74.1)	240 (80.0)	463 (77.0)
Average	65 (21.6)	49 (16.3)	114 (19.0)
Poor/very poor	13 (4.3)	11 (3.7)	24 (4.0)

* Mean values \pm standard deviations.

[†] Numbers and column percentages (in parentheses).

(58% vs. 26%, respectively). About 24% of the study participants reported 1-2 health visits at the primary health care services in the past year, 31% reported 3-4 health visits, 21% reported 5-6 health visits, and the remaining 24% reported seven or more health visits. There was evidence of a high degree of overall satisfaction with primary health care services in this survey sample: 77% of participants rated as “good” or “very good” the medical encounter, compared to only 4% of individuals who rated as “poor” or “very poor” the quality of primary health care services. Compared to males, the females tended to rate slightly higher the overall quality of primary health care services (Table 1). Overall, reliability (internal consistency) of the whole scale (37 items) was Cronbach’s alpha=0.94

(95%CI=0.93-0.95); it was higher in males than in females (0.95 vs. 0.92, respectively) [Table 2]. Overall, Cronbach’s alpha ranged from 0.72 for the “*effectiveness and efficiency*” domain to 0.92 for the “*continuing professional development*” subscale. Among males, the “*methods and tools*” subscale displayed the lowest internal consistency (Cronbach’s alpha=0.68, 95%CI=0.62-0.74), whereas “*equity and ethical practice*” exhibited the highest (Cronbach’s alpha=0.95, 95%CI=0.94-0.96). On the other hand, in females, the lowest internal consistency was evident for the “*equity and ethical practice*” subscale (Cronbach’s alpha=0.67, 95%CI=0.61-0.72), whereas the highest was exhibited for “*continuing professional development*” domain (Cronbach’s alpha=0.91, 95%CI=0.90-0.93) [Table 2].

Table 2. Internal consistency of each domain (subscale) of the instrument by sex

Domain (subscale)	Men (N=301)	Women (N=300)	Overall (N=601)
Overall scale (37 items)	0.95 (0.94-0.96)*	0.92 (0.91-0.93)	0.94 (0.93-0.95)
Patient care and safety (8 items)	0.74 (0.70-0.78)	0.81 (0.77-0.84)	0.77 (0.74-0.80)
Effectiveness and efficiency (7 items)	0.75 (0.71-0.79)	0.68 (0.62-0.73)	0.72 (0.68-0.75)
Equity and ethical practice (8 items)	0.95 (0.94-0.96)	0.67 (0.61-0.72)	0.78 (0.76-0.81)
Methods and tools (5 items)	0.68 (0.62-0.74)	0.87 (0.85-0.90)	0.75 (0.72-0.78)
Leadership and management (4 items)	0.91 (0.90-0.93)	0.86 (0.83-0.89)	0.89 (0.88-0.91)
Continuing professional development (5 items)	0.93 (0.92-0.94)	0.91 (0.90-0.93)	0.92 (0.91-0.93)

* Cronbach’s alpha and their respective 95% confidence intervals (in parentheses).

The overall summary score for the 37-item instrument was 123.7 ± 19.1 ; it was negligibly higher in females than in males (124.1 ± 18.0 vs. 123.4 ± 20.1 , respectively, $P=0.587$) [Table 3]. All the subscale summary scores were very similar in both sexes and, hence, there were no statistically significant differences in the subscale summary scores between males and females (Table 3).

Overall, there was a weak inverse correlation between the whole summary score and age of participants (Spearman’s rho= - 0.15, $P<0.001$) and the number of visits to the health center in the past year (Spearman’s rho= - 0.18, $P<0.001$). Conversely, there was evidence of a mild positive correlation of the overall summary score of the 37-item tool with educational attainment (Spearman’s rho=0.22, $P<0.001$) and income level (Spearman’s rho=0.29,

Table 3. Summary score of each domain (subscale) of the instrument by sex

Domain (subscale)	Overall (N=601)	Sex-specific		P†
		Men (N=301)	Women (N=300)	
Overall scale (score range: 37-185)	123.7±19.1*	123.4±20.1	124.1±18.0	0.587
Patient care and safety (score range: 8-40)	26.8±4.6	26.8±4.9	26.7±4.2	0.567
Effectiveness and efficiency (score range: 7-35)	23.0±4.0	22.9±4.2	23.1±3.7	0.491
Equity and ethical practice (score range: 8-40)	27.4±5.7	27.2±5.3	27.6±6.1	0.997
Methods and tools (score range: 5-25)	16.0±3.1	15.9±3.5	16.1±2.6	0.095
Leadership and management (score range: 4-20)	13.2±2.4	13.2±2.6	13.3±2.1	0.813
Continuing professional development (score range: 5-25)	17.4±3.3	17.3±3.5	17.4±3.2	0.787

* Mean values ± standard deviations.

† P-values from Mann-Whitney's U-test.

P<0.001) [data not shown in the tables].

Discussion

Our preliminary findings provide useful information on the level of skills, abilities and competencies of family physicians from primary health care users' perspective in Kosovo. The assessment instrument administered in our study sample exhibited a rather high internal consistency, particularly in men. The internal consistency in our study (sex-pooled Cronbach's alpha=0.94) was higher than in a prior validation study in Kosovo, which reported an overall Cronbach's alpha=0.88 (8). Furthermore, the questionnaire employed in our current survey in Kosovo showed a higher reliability (internal consistency) than in a prior validation study conducted in the neighboring Albania (6). Interestingly, in our study the internal consistency was higher in men than in women, a finding which differs from a previous report from Albania (6). The overall summary score of the 37-item instrument was quite high in this representative sample of primary health care users in Kosovo, with no evidence of sex-differences. This finding related to a high score of family physicians' skills and competencies goes in line with the rather positive assessment of the quality of primary health care services among our study participants. As a matter

of fact, the overall summary score of the tool was higher in our current study compared to the previous validation exercise which was conducted in a sample of 98 primary health care users in Kosovo (8). Also, the overall summary score in our study was particularly higher compared to prior reports from Albania (6,7).

In our study, the level of skills, abilities and competencies as assessed by patients' perspective was positively correlated to educational attainment and income level, contrary to the Albanian study which obtained no evidence of associations with socioeconomic characteristics of study participants (6). It is appealing to compare primary health care users' assessment scores with the self-assessed scores of their respective family physicians. Patients' views about the quality of health care services including the skills and competencies of their physicians may vary considerably from the standpoints of health professionals themselves. Therefore, future studies in Kosovo should explore this interesting issue in detail.

In conclusion, the preliminary findings from this nationwide survey provide useful information on the level of skills, abilities and competencies of

family physicians from primary health care users' standpoint in transitional Kosovo.

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How to develop public health leaders for the 21st Century

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Abstract

Skills to work across disciplines and especially trans-disciplinary education are essential for leadership in public health. Further, effective leadership skills are required to affect constructive change in health care settings and practices. Several influential professional development programs such as Health Care Management (HCM) program developed and delivered by Project Hope. The project Developing European Leadership Through Action-learning in Healthcare (DELTAH) aimed to improve the performance of participating healthcare organisations through fostering the level of leadership skills amongst healthcare managers. However, few programmes have been developed to equip public health professionals with leadership competencies which specifically reflect public health discipline. "Leaders for European Public Health" (LEPHIE) Project funded by the European Commission Lifelong Learning Programme was designed to develop a curriculum for European Public Health Leaders. The public health leadership content is aimed to be applicable to the performance in diverse European Public Health practices and contexts and reflects the priorities and objectives of the European Health Program. The programme is competence based. A competency framework has been developed to support the curriculum and facilitate self-assessment. The Module uses innovative training methods, such as problem-based and blended learning formats. We believe that the integration of modern technology with a collaborative approach to learning by professionals, supported by interdisciplinary competency-based educational design, will result in a transformative learning experience.

Keywords: competencies, educational innovation, leadership, public health.

Given the challenges facing public health professionals such as globalisation, health threats aging of the workforce (1), social and health inequalities which result in the increased level of unpredictability, a cross-disciplinary public health workforce is needed supported by new skills and expertise (2,3). Skills to work across disciplines and especially trans-disciplinary education are essential for leadership in public health (4,5). Further, the skills required to affect constructive change in these challenging time are not the traditional technical and academic skills but those of effective leadership. These leadership skills can help to deal with the complexity of health settings and practices (6). The leadership skills are the key skills required to facilitate the implementation of the organisational changes necessary to improve the performance of healthcare systems. The leadership skills are vital to work successfully across traditional departmental, organisational, inter-sectoral and national boundaries to develop productive partnerships with a range of stakeholders, including service users and healthcare professionals. The investment should be made in innovative and creative leadership programmes. Public health education and training need to be transformative and interdependent (7). The particular type of leadership required is not of a traditional command and control variety but rather akin to what has been termed “adaptive” leadership: leading in contexts where there is considerable uncertainty and ambiguity, and where there is often imperfect evidence and an absence of agreement about both the precise nature of the problem and the solutions to it (8).

Organisations and professionals worry about the capacity of future Public Health leaders (9) and policymakers are concerned about the future responsiveness of the discipline. The presence of competent leaders is regarded as crucial to achieve progress in the field (10) and solve complex Public Health challenges (11). It appears that there is a need to support Public Health leadership development. It can be done through the design of specially tailored educational curricula which can be defined as “the way the subject matter is conceptualised and how its major components are arranged, in order to provide direction for curriculum development” (12). The key challenges in public health curriculum

development are to ensure that the content covers the competencies required in the field and that there is a clear understanding of what Public Health leadership entails (9). Wright and colleagues identify four key areas of public health leadership practice: transformation, legislation and politics, trans-organisation and team and group dynamics which are necessary to build interdisciplinary Public Health practice, strong collaborative networks and teams at every level of the Public Health system, from politicians and policymakers to the mass media and the general public. In order to design a public health leadership curriculum for professionals, a comprehensive concept of public health including a variety of elements of Public Health practice is needed. Thus, the Essential Public Health Services (13) or Operations (8) have the potential to serve as a good framework to base the program content on and competency frameworks which specifically address the leadership qualities. On the other hand, it is vital to look for good practices and experience elsewhere.

One of the best professional development programs designed specifically for healthcare leaders in Central and Eastern Europe was the Health Care Management (HCM) program developed and delivered by Project Hope. The primary focus of the HCM was to provide participants a solid foundation in the following content areas: strategy, quality improvement, financial management, and human resources. The HCM was not designed to specifically address leadership development from the perspective of leader competencies, but it did set the stage for what is now seen as an excellent opportunity to introduce a rigorous program of leadership development.

Another influential leadership program was: Developing European Leadership Through Action-learning in Healthcare (DELTAH) a three - year Action Research Project, which aimed to improve the performance of participating healthcare organisations in the UK, Poland and the Netherlands, through improving the level of leadership skills amongst healthcare workers.

However, few programmes have been developed to equip public health professionals with leadership competencies which specifically reflect public health discipline. Our objective is to introduce the

“Leaders for European Public Health” (LEPHIE) Project funded by the European Commission Lifelong Learning Programme to the readership of the Albanian Medical Journal as an example of the integrated, collaborative and public health focused practice targeting busy public health professionals. The aim of the project was to develop a curriculum for a European Public Health Leadership. The following course objectives were set to guide the curriculum development process:

- “Examine the key debates around Leadership in Public Health in relationship to political, economic, social and, technological change and their implications for leaders within organisations.

- Introduce key theoretical frameworks that underpin leadership learning, and enable the critical use of this knowledge and understanding by applying theory to actual practice within the context of Public Health.

- Develop the ability to reflect on the Public Health leadership role and development needs of individuals.

- Stimulate self-assessment of leadership competencies by public health professionals” (14). The course is competency-based, process and output oriented. It is embedded in the Public Health paradigm, designed to address Public Health core functions and services. The public health leadership content is aimed to be applicable to the performance in diverse European Public Health practices and contexts and reflect the priorities and objectives of European Health Program. The course aims at the development of leadership competencies excluding management skills. Based on the review of public health and public health leadership competencies frameworks and leadership literature and expert reviews panels a framework has been developed to support the curriculum and facilitate self-assessment. The competencies are distributed around nine domain areas of development, which is described elsewhere (15): Systems Thinking, Political Leadership, Building & Leading Interdisciplinary Teams, Leadership and Communication, Leading Change, Emotional Intelligence & Leadership in Team-based Organisations, leadership Organisational Learning & Development, Ethics and Professionalism, and Global Values Leadership (14).

The Module uses innovative training methods such as problem-based and blended learning formats (combination of face-to-face and online learning). The students are viewed as active participants in learning, rather than a passive recipient of knowledge and should take responsibility for and plan their own learning as they construct or reconstruct their knowledge networks. Learning becomes a collaborative process. Moreover, students also play an active role in monitoring and evaluating the learning process in which the following conditions are met: students have a common goal, share responsibilities, are mutually dependent on each other for their learning needs, and are able to reach agreement through open interaction (16). Knowledge transfer can be facilitated by learning in meaningful contexts, and problem-based learning nurtures the ability of learners to solve real-life problems whilst fostering communication and cooperation among students (16). Such an educational approach proves to be successful in the LLL context. The participants are offered interactive lectures, tutorial group meetings and other collaborative sessions at a distance. The course is delivered via an intranet such as Blackboard or Moodle and course material can be directly downloaded from the intranet.

LEPHIE is a first, yet innovative, attempt to develop an integrated Public Health leadership curriculum in which each on-line session is delivered by different universities based on their interdisciplinary expertise. After being successfully piloted at the Sheffield Hallam University, Maastricht University, Medical University of Graz and Kaunas University of Health Sciences, the international blended learning leadership course worth 7 ECTS will be offered to public health professionals as Continuous Professional Development (CPD) training. We believe that the integration of modern technology with a collaborative approach to learning by professionals supported by interdisciplinary competency-based educational offerings transcending institutional boundaries will result in a transformative learning experience. LEPHIE is all about developing leadership attributes (7) and will constitute a small step towards inter-professional and trans-professional education of the skills that they require to maximise the impact of public health initiatives. This is the future of professional development of Public Health leaders in the 21st Century.

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Lifestyle predictors of hypertension in the adult population of post-war Kosovo

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Abstract

Aim: We have previously reported on the prevalence and socioeconomic predictors of hypertension in the adult population of transitional Kosovo. The aim of this study was to assess the association of hypertension with lifestyle/behavioral factors in the adult men and women in Kosovo.

Methods: A cross-sectional study was conducted in Pristina in 2012-2013 including a representative sample of 1793 consecutive primary health care users aged ≥ 35 years (mean age: 51.2 ± 6.7 years; 52.5% women; overall response rate: 95%). All participants were measured their systolic and diastolic blood pressure. Data on lifestyle factors (including smoking, alcohol intake, physical exercise and dietary fat intake), demographic factors and socioeconomic characteristics were also collected. Binary logistic regression was used to assess the association of hypertension with lifestyle/behavioral factors.

Results: The prevalence of hypertension was 38.9% in men and 28.8% in women. In crude logistic regression models, hypertension was positively related to smoking (OR=1.78, 95%CI=1.39-2.30), excessive alcohol consumption (OR=2.53, 95%CI=1.78-3.66), physical inactivity (OR=2.71, 95%CI=1.67-3.86) and excessive dietary fat intake (OR=2.21, 95%CI=1.53-3.09). Upon simultaneous adjustment for socioeconomic characteristics and lifestyle factors, significant "determinants" of hypertension were smoking (OR=1.64, 95%CI=1.24-2.07) and physical inactivity (OR=2.13, 95%CI=1.42-2.94).

Conclusions: Our findings point to a deleterious effect on coronary health of behavioral factors in this representative sample of the adult population in Kosovo. There is an obvious need for policymakers and health promotion specialists in Kosovo to implement effective programs and activities in order to control and prevent the negative health outcomes related to hypertension.

Keywords: alcohol intake, behavioral factors, fat consumption, high blood pressure, hypertension, Kosovo, lifestyle factors, physical activity, smoking.

Introduction

Hypertension is a well-known major risk factor for cardiovascular morbidity and mortality in both men and women worldwide. This fact was systematically evidenced in many studies and was confirmed also by the Global Burden of Disease Study update for 2000 (1), and the more recent update for 2010 (2,3). Currently, hypertension is one of the leading global risks for mortality, being responsible for 9.4 million deaths in 2010 (4). This substantial burden of disease associated with hypertension has been reported in any large international studies (3). It should be noted that increased blood pressure contributes to cardiovascular and cerebrovascular endpoints, such as myocardial infarction, heart failure, cardiovascular death and stroke (4).

In Kosovo, the newest state in Europe, mortality trends of chronic diseases including cardiovascular diseases are similar to the adult mortality trends and life expectancy in both sexes. Notwithstanding the lack of well-documented evidence and the absence of official reports, stroke mortality in Kosovo is substantially higher than in the European Union member states, a situation which is similar to many countries in the Western Balkans and other former communist countries in Central Europe. Thus, changes in cardiovascular disease mortality account for the noticeable changes in the overall mortality patterns in transitional Kosovo. Nonetheless, according to the Household Budget Survey conducted in Kosovo in 2011, the prevalence of smoking in the population of Kosovo aged ≥ 15 years (13.0% in the overall population) is lower than in other countries of the Western Balkans including the neighboring Albania (5).

To date, information on the prevalence and determinants of hypertension in the adult population of Kosovo are scarce. We have previously reported on the prevalence and socioeconomic predictors of hypertension in the adult population of transitional Kosovo (6). However, little is known about behavioral correlates of hypertension (including cigarette smoking, alcohol intake, physical exercise, or dietary patterns) in the population of Kosovo. The aim of this study was to assess the association of hypertension with lifestyle/ behavioral factors in the adult men and women in Kosovo. We based our analysis on the same representative sample of

primary health care users as reported in our previous article on the prevalence and socioeconomic determinants of hypertension in Kosovo (6).

Methods

A cross-sectional study was conducted in Pristina, the capital city of Kosovo, in 2012-2013.

Study population and sampling

A sample of 2000 consecutive primary health care users aged ≥ 35 years was invited to participate in the study. Calculation of the sample size was made by use of WINPEPI (Program for Epidemiologists) for several hypotheses related to the prevalence and behavioral determinants of hypertension including smoking, alcohol intake, physical exercise and dietary fat consumption. The significance level (two-tailed) was set at 5%, and the power of the study at 80%. Based on the most conservative calculations, the required minimal size for a simple random sample was about 1700 individuals. We decided to recruit 2000 individuals in order to account for non-response. Of the 2000 targeted individuals, 207 did not participate in the study (113 individuals were not eligible, whereas further 94 individuals refused to participate). Overall, 1793 primary health care users were included in this study (response rate: $1793/1887=95\%$). It should be noted that the response rate was similar in men and women.

Data collection

All participants were measured their systolic and diastolic blood pressure (6). Measurement of blood pressure was done with an electronic sphygmomanometer three times in the right arm (with a one-minute pause in between), after the subject was seated for five minutes in a quiet room, during which the cuff was attached. The average of the 2nd and the 3rd measurements was used in the analysis. Hypertension was defined as systolic blood pressure ≥ 140 mmHg, or diastolic blood pressure ≥ 90 mmHg, or self-reported treatment for hypertension regardless of the measurement values (6).

Assessment of lifestyle/ behavioral factors included smoking status (dichotomized in the analysis into: current and/ or past smokers vs. no smokers), alcohol intake (dichotomized in the analysis into:

excessive alcohol intake vs. no/ low/ moderate intake), physical exercise (categorized in the analysis into: low, moderate and high) and dietary fat intake (categorized in the analysis into: low, moderate and high).

Data on socio-demographic factors (sex, age, place of residence [urban vs. rural area] and marital status [married vs. single/ divorced/ widowed]) and socioeconomic characteristics (educational level [low, middle, high], employment status [employed, unemployed, pension] and income level [low, middle, high]) were also collected (6).

The survey was approved by the Kosovo Board of Biomedical Ethics. All individuals who agreed to participate in the study gave their informed consent.

Statistical analysis

Binary logistic regression was used to assess the association of hypertension (dichotomous/ binary variable) with lifestyle/ behavioral factors (smoking, alcohol intake, physical exercise and dietary fat intake). Crude/ unadjusted odds ratios (ORs) and their respective 95% confidence intervals (95% CIs)

were initially calculated. Subsequently, all socio-economic variables and lifestyle/behavioral variables were entered simultaneously into the logistic regression models. Multivariable-adjusted ORs and their respective 95% CIs were calculated. Hosmer-Lemeshow test was used to assess the goodness of fit of the logistic regression models. Statistical Package for Social Sciences, version 17.0, Chicago, Illinois, was used for all the statistical analyses.

Results

Mean age of study participants was 51.2 ± 6.7 years. There were 851 (47.5%) men and 942 (52.5%) women in the study sample. Overall, about 57% of survey participants were urban residents and 86% were currently married. Unemployment rate was relatively high in this sample (33%), which was also reflected in a high proportion of self-reported low income level (39%) [data not shown].

The prevalence of hypertension in this study sample was $602/1793=33.6\%$. It was higher in men (331, or 38.9%) than in women (271, or 28.8%) [Figure 1].

Figure 1. Prevalence of hypertension in a large representative sample of adult men and women in Kosovo (N=1793) in 2012-2013

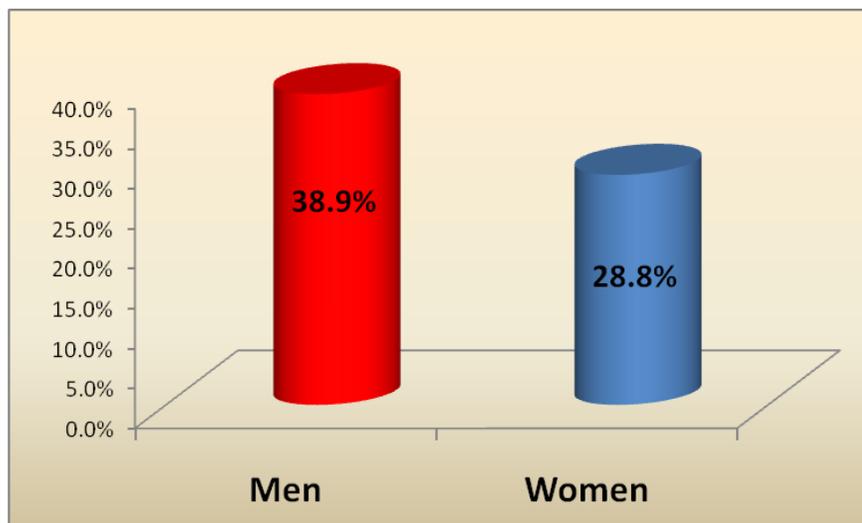


Table 1 presents the distribution of lifestyle characteristics of study participants by hypertension status. The prevalence of smoking was significantly higher in individuals with hypertension compared with those without hypertension (28.0% vs. 17.9%, respectively). Similarly, excessive alcohol intake was

considerably higher among participants with hypertension compared with those without hypertension (16.3% vs. 7.1%, respectively). A sedentary lifestyle was reported more frequently among individuals with hypertension (40.4%) compared with participants without hypertension (26.9%).

Finally, excessive fat intake was more prevalent among hypertensive subjects (17.9%) than in individuals without hypertension (9.0%). Table 2 presents the crude/ unadjusted association

Table 1. Distribution of lifestyle/ behavioral factors in a large representative sample of adult men and women in Kosovo (N=1793) in 2012-2013

Lifestyle/behavioral factor	Numbers (column percentages)	
	No hypertension (N=602)	Hypertension (N=1191)
Present or past smoker:		
No	494 (82.1)	857 (72.0)
Yes	108 (17.9)	334 (28.0)
Excessive alcohol intake:		
No	559 (92.9)	997 (83.7)
Yes	43 (7.1)	194 (16.3)
Physical activity:		
Low	162 (26.9)	481 (40.4)
Moderate	293 (48.7)	549 (46.1)
High	147 (24.4)	161 (13.5)
Fat intake:		
Low	234 (38.9)	417 (35.0)
Moderate	314 (52.1)	561 (47.1)
High	54 (9.0)	213 (17.9)

of hypertension with lifestyle/ behavioral factors. Hypertension was positively related to smoking (OR= 1.78, 95% CI= 1.39-2.30), excessive alcohol consumption (OR=2.53, 95% CI=1.78-3.66), physical inactivity (OR=2.71, 95% CI=1.67-3.86) and excessive

dietary fat intake (OR= 2.21, 95% CI= 1.53-3.09). Upon simultaneous adjustment for demographic and socioeconomic characteristics and other lifestyle factors, significant “determinants” of hypertension were smoking (OR= 1.64, 95% CI= 1.24-2.07) and

Table 2. Association of hypertension with lifestyle/ behavioral factors in a large representative sample of the adult population in Kosovo (N=1793) in 2012-2013

Variable	OR (95% CI)*	P*
Present or past smoker:		
No	1.00 (reference)	<0.01
Yes	1.78 (1.39-2.30)	
Excessive alcohol intake:		
No	1.00 (reference)	<0.01
Yes	2.53 (1.78-3.66)	
Physical activity:		
Low	1.00 (reference)	-
Moderate	1.58 (1.14-3.21)	<0.01
High	2.71 (1.67-3.86)	<0.01
Fat intake:		
Low	1.00 (reference)	-
Moderate	1.01 (0.78-1.39)	0.98
High	2.21 (1.53-3.09)	<0.01

* Odds ratios (ORs), 95% confidence intervals (95%CI) and p-values from binary logistic regression.

† Overall p-value and degrees of freedom (in parentheses).

physical inactivity (OR=2.13, 95%CI= 1.42-2.94) [data not shown in the tables].

Discussion

In this study including a representative sample of primary health users of both sexes in Kosovo, there was evidence of a strong positive relationship between hypertension and lifestyle/ behavioral factors. Thus, smoking and physical inactivity were strong and significant “predictors” of hypertension even upon multivariable adjustment for a wide array of demographic and socioeconomic characteristics, as well as other lifestyle factors including excessive alcohol intake and dietary fat consumption.

Overall, in our study sample there was a relatively high prevalence of hypertension, which raises serious concerns for health care professionals and decision makers in the health sector in Kosovo. Furthermore, the prevalence of hypertension was considerably high particularly among men and the most vulnerable socioeconomic segments of the population (the unemployed and the low-income groups) [6]. The prevalence of hypertension in our study in Kosovo was higher compared with a previous study from Albania, which also reported a strong positive association between cigarette smoking and acute coronary syndrome in adult men and women (7). The strong positive relationship between hypertension and physical inactivity is consistent with previous reports from the neighboring Albania which have also linked a sedentary lifestyle to diabetes (8) and acute coronary syndrome (9).

There is mounting evidence from the international literature linking high levels of systolic and diastolic blood pressure with stroke, and the ischemic heart disease (3,4). Therefore, there have been consistent reports suggesting that hypertension is the number one risk for mortality because of its dominant role in cardiovascular pathogenesis (3,4).

In addition to these facts, for transitional countries of the Western Balkans including Albania and Kosovo, the rapid pace of transition and its inherent association with hypertension (10), including also the reduced energy expenditure and the consequent obesity, bear important implications for both the health care and health promotion sectors in these countries (6).

Despite the evidence on a fall in blood pressure levels during the last decade in Europe, it has been

argued that hypertension will remain one of the most important cardiovascular risk factors given the ageing trend of the population worldwide (4). Therefore, in order to control and prevent the magnitude and burden of hypertension at a population level, the well-known suboptimal hypertension control rates should be of great concern to health care professionals (4). At the same time, intensive efforts should be done in order to identify and test new strategies for an improvement in awareness and effective treatment for hypertension, which are crucial measures to control the extent of hypertension at a population level (4,6).

It must be said that our study may suffer from different limitations including the sample representativeness (selection bias) and potential information biases. In our study, we included a large sample of consecutive primary health care users of both sexes. Furthermore, the response rate in our study was very high (95%). Also, respondents and non-respondents did not differ significantly in terms of age and sex. Therefore, there is no evidence of selection bias in our study sample. Regarding the possibility of information bias, we applied standard procedures of systolic and diastolic blood pressure measurements in all study participants (6). However, the information on lifestyle/ behavioral factors was based on self-reports, similar to the demographic and socioeconomic characteristics. Hence, we cannot exclude entirely the possibility of differential reporting of the lifestyle factors between different groups of individuals distinguished by the presence of hypertension. Last but not least, associations reported in cross-sectional studies should always be interpreted with great caution, because such associations are not considered to be causal. From this point of view, future prospective studies in Kosovo and other transitional settings should confirm and replicate results of this study.

In conclusion, our findings point to a deleterious effect on coronary health of behavioral factors in this representative sample of the adult population in Kosovo. There is an obvious need for policymakers and health promotion specialists in Kosovo to implement effective programs and activities in order to control and prevent the negative health outcomes related to hypertension.

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Iron deficiency anemia in selected patients at Vlora Regional Hospital, Albania

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Abstract

Aim: This study examined the levels of anemia, severity, and improvement of various blood parameters following treatment for *Helicobacter pylori*.

Methods: The study involved 75 patients presented at the Gastrohepatology/Hematology Ward at the Regional Hospital in Vlora, examined at the laboratory of this hospital during the period January-December 2012.

Results: Of the 75 patients examined, 76.9% (N=30) resulted positive for *Helicobacter pylori*, with 40% of the total (N=30) exhibiting symptoms of anemia.

Conclusion: *Helicobacter pylori* is one of the many causes of anemia, but responds well to proper medical treatment, resulting in quick improvement of blood parameters. We recommend implementation of serologic and other analysis for *Helicobacter pylori* as a component of routine hospital services.

Keywords: anemia, *Helicobacter pylori*, Vlora.

Introduction

Anemia is one of the most common pathologies encountered in daily medical practice, described by the World Health Organization (WHO) as being hemoglobin <120 g/l in females and <130g/l in males. There are a great number of factors which cause anemia, but the most commonly mentioned include: acute blood loss, hemolysis, or iron-deficiency anemia caused by chronic illnesses, which constitute the greatest percentage of anemia (1,2). There are various methods for classifying anemia, such as the number of erythrocytes, hematocrits, hemoglobin and, finally, based upon MCV (Median Corpuscular Volume), or the size of red blood cells and number of reticulocytes (3).

Beginning with the fact that massive blood loss causes anemia, and that the source of such loss must be identified, it is known that the most common loss is within the digestive system, and proper treatment results in patient improvement. However, in various studies where patients have not exhibited signs of gastrointestinal blood loss and/or endoscopic exam has resulted negative, the conditions which are most common include the morbid Coeliac or malabsorption (4,5). By comparison, the role of *Helicobacter pylori* in iron-deficiency anemia must be given greater consideration.

Helicobacter pylorus is a long bacterium with lophotrichous flagella in bent form, similar to the letter U. As with all other campylobacters, it is microaerophilic, found in the gastric mucous or gastric salts where there is no bacterial competition. There is morphological advantage in the movement of viscous gastric mucous. Locating of bacteria among epithelial cells of the mucous ensures hemic

increase and favors multiplication. Throughout this multiplication several factors are released which are damaging for the mucous cells.

Several different methods exist for identification of *Helicobacter pylori*. Our study employed serum diagnosis, the Elisa method – utilizing an Abbot Commander we identified IgG anti HP (6).

Objective

The objective of this study was to observe findings of *Helicobacter pylori* in individuals under study, the level of anemia caused by gastritis from *Helicobacter pylori*, and improvement of blood parameters following treatment.

Methods

This study involved 75 persons (30 males and 45 females; 40% and 60%, respectively) treated in the Gastrohepatology/ Hematology Ward of the Regional Hospital in Vlora.

Comparative examinations were conducted for HGB, HCT, MCV, ferritins, and serum iron, plus examinations for *H. pylori* IgG anti HP.

Anemia was categorized as (a) mild-to-moderate when Hb levels among males registered 90-120 g/l, whereas for females the range was 80-110 g/l; or (b) acute anemia if the level of Hb was below 70 g/l for males and 80 g/l for females.

Results and discussion

Of the 75 persons examined, 52% (N=39) were positive for IgG anti-HP. Of these, 40% of the total, or 76.9% of those who resulted iron deficient (N=30), manifested symptoms associated with anemia. Table 1 contains the resulting values, measured by Micros 60 cell counter and ECO auto analyzer.

Table 1. Findings from the blood analysis among 30 persons who were iron-deficient

No.	Erythrocytes	Hb	Hct	MCV	MCH	Serum iron	Ferritine
1	4.120 000	11,0	33,0	64	19.6	48	64
2	3.700 000	9.6	28.8	72	26.1	35	14
3	5.120 000	10,0	30,0	58	19.4	41	36
4	4.136 000	10.7	32.1	70	26.1	46	20
5	3.20 000	8.9	26.7	80	27.9	28	12
6	4.100 00	10.9	32.7	73	26.2	48	27
7	3.810 000	10.6	31.8	69	25.1	45	19
8	3.940 000	10.4	32.1	76	26.2	43	39
9	4.810 000	9,0	27,0	71	26,0	28	16
10	2.916 000	8,0	24,0	81	27.9	19	11
11	5.90 000	9.1	27,3	54	18.1	32	74
12	3.640 000	10.2	30.6	75	26.3	41	29
13	4.150 000	8.8	26.4	60	21.5	29	34
15	3.10 000	9.1	27.3	75	26.4	30	22
16	4.350 000	11,3	33,9	66	20.4	43	21
17	3.700 000	10.8	32.4	77	26.4	47	34
18	4.160 000	9.5	28.5	72	26,0	34	26
19	3.159 000	9.2	27.6	61	24.8	31	14
20	4.140 000	10.6	31.8	64	24.3	45	19
21	5.110 000	9.4	28.2	69	24.3	36	55
22	4.240 000	9.9	29.7	74	26,2	40	68
23	3.817 000	10.5	31.5	66	22.5	44	17
24	3.990 000	10.8	32.4	73	26.1	47	29
25	3.110 000	8.7	26.1	62	21.9	26	15
26	4.20 000	10.3	30.9	79	26.5	42	50
27	5.16 000	9.6	28.8	65	23.1	35	41
28	4.12 000	9.9	29.7	76	26.1	39	25
29	3.461 000	10.1	30.3	70	25.8	42	27
30	3.27 000	8.6	25.8	64	25.1	26	18

These 30 cases, from a selected pool of 75, were positive for *Helicobacter pylori* (IgG anti HP, ELISA method, with Abbot Commander equipment).

Norms and standards of analysis

RBC

$$\bar{X} = 3.880.000 \quad \sigma = 1.023807 \quad \bar{X} \pm \sigma \quad 2.857.000 \div 4.903807$$

Normal values 4.200.000 ÷ 5.800.000

P < 0.05 Significant difference

Hb

$$\bar{X} = 9.8 \quad \sigma = 0.9 \quad \bar{X} \pm \sigma \quad 8.9 \div 10.8$$

Normal values 12 – 16.5

P < 0.001 Significant difference

HCT

$$\bar{X} = 29.5 \quad \sigma = 2.5 \quad \bar{X} \pm \sigma 27.0 \div 32$$

Normal values 38 ÷ 50 %

P<0.05 Significant difference

Ferritine

$$\bar{X} = 30 \quad \sigma = 17 \quad \bar{X} \pm \sigma 13 \div 47$$

Normal values 20 ÷ 220

P<0.01 Significant difference

Serum iron

$$\bar{X} = 38 \quad \sigma = 8 \quad \bar{X} \pm \sigma 30 \div 46$$

Normal values 50 ÷ 165 mg/dl

P<0.01 Significant difference

Conclusions

Findings of this study suggest the following conclusions:

- Comparison of other factors against *Helicobacter pylori* and resulting gastritis play a significant role in iron-deficiency anemia, as found in 40% (N=30) of subjects in this study.
- Proper treatment against *Helicobacter pylori* results in a rapid improvement of blood values (7).
- Serological examinations and other means for detection of *Helicobacter pylori* should become routine procedures in all hospital services (8).

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Inflammatory myofibroblastic tumor of the spleen in children

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Abstract

Inflammatory myofibroblastic tumor (IMT) is a rare benign neoplasm, which mainly involves lungs of the children. Extra-pulmonary locations are manifested mostly in viscera, but localization in the spleen is extremely rare with only few case reports in literature. Although it is commonly seen in children, the numbers of childhood cases are limited. We described a case of IMT of the spleen in a 16-year-old boy who visited our hospital with worsening fatigue symptoms and mild upper abdominal discomfort. The abdominal ultrasound was performed indicating a low echoic mass located in the spleen and measuring 18x10x10 cm. An abdominal CT scan was performed and demonstrated a large low-density hypovascular mass. Splenectomy was indicated and performed. Intra-operative and postoperative courses were uneventful.

Keywords: Children, Croatia, inflammatory myofibroblastic tumor, pediatrics, spleen.

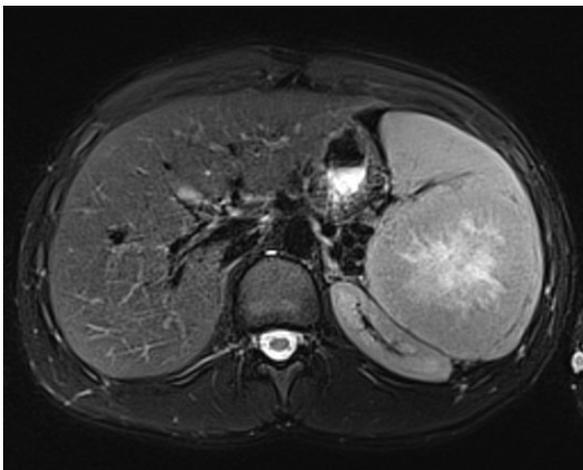
Introduction

Inflammatory myofibroblastic tumor (IMT) is a benign tumor of unknown etiology consisting of myofibroblastic spindle cells with an inflammatory cells infiltration. Their behavior is not aggressive, but sometimes can simulate malignant neoplasm, from which it impossible to distinguish before excision (1). A number of terms have been applied to this tumor including inflammatory pseudo-tumor, benign myofibroblastoma, plasma cell pseudo-tumor, hamartoma, fibrosarcoma, leiomyosarcoma and inflammatory myofibroblastic tumor (2). IMT was first observed in lungs and described by Bunn in 1939. It was named as IMT because it mimics malignant neoplasm clinically, radiologically and histopathologically. Recurrence is extremely rare if resection is complete and metastases occur in less than 5% (3).

Case report

A 14-year-old boy visited our hospital with worsening fatigue symptom, night sweats and mild upper abdominal discomfort. In a routine health evaluation ultrasound which was made incidentally, a splenic tumor was found. Abdominal ultrasound revealed an 18x10x10 cm solid splenic mass. These findings were confirmed by a computed tomography scan which showed a solid hypoechoic nodular, well-defined, round and with a smooth mass lesion (Figure 1).

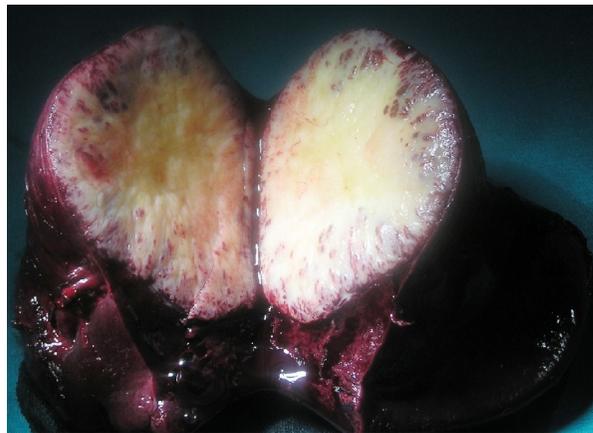
Figure 1. CT scan of the spleen with tumor



Images of other abdominal organs appeared normal. Physical evaluation showed no hepatomegaly,

splenomegaly, or lymphadenopathy. The differential diagnosis included splenic hamartoma, hemangioma, lymphangioma or lymphoma. Laboratory findings were unremarkable with elevation of erythrocyte sedimentation rate (28 mm/h), mild leukocytosis (14.5×10^9 cells/L) with mild neutrophilia and C-reactive protein (CRP) value was 15 mg/dL. Laparotomic splenectomy was indicated and performed. On abdominal findings, the mass was without adhesions to the surrounding organs or structures and spleen was removed without any accidents. Macroscopically, the serosal surface and the cut surface were both smooth. The cut surface revealed round, solid and well circumscribed mass. Upon cut, we could observe a whitish-yellowish sharply circumscribed tumor with a medium-to-firm consistency. The tumor did not permeate the capsule (Figure 2).

Figure 2. Macroscopic spleen with tumor



Histologically, the tumor was composed of sheaves of uniform, spindle-shaped cells with elongated nuclei and prominent nucleoli, and partially there were observed histiocytes, plasma cells, lymphocytes and eosinophils. Immunohistochemical analyses of single cells were positive for smooth muscle actin (SMA) and vimentin, with a part of lymphatic cells positive for CD20 and CD3, showing no restriction in expression in light chains (kappa, lambda). Endothelial cells were positive for CD 31. Tumor cells were negative for ALK, and Ki67 proliferation activity in the "hot spot" was less than 5%. Intra-operative and postoperative courses were uneventful and the patient is currently asymptomatic 4 years after surgery. He is now healthy and has no complaints.

Discussion

Although most commonly seen in the lungs, IMT are known to occur at several anatomic sites like orbit, spinal meninges, digestive system, heart, soft tissues, pancreas, liver, kidney, urinary bladder, mesothelial membranes and respiratory tract. Splenic involvement is extremely rare (4). A number of terms have been applied to the tumor, namely, inflammatory pseudotumor, benign myofibroblastoma, plasma cell pseudotumor, fibrous xanthoma, hamartoma, fibrosarcoma, leiomyosarcoma and inflammatory myofibroblastic tumor (2). Originally described in the lung, its occurrence is well-accepted to affect every organ. IMT can be found in adult spleen, whereas in children only rare cases have been reported. In a large review of splenic IMT, the average age was 53 years (range of 19 to 87 years) and there was no sex preference. IMT are most frequently detected incidentally. If symptomatic, most patients exhibit pain in the left upper quadrant, epigastric pain or very rare thrombocytopenic purpura (5). The cause of IMT of the spleen is unknown. Various hypotheses have been put forward in the

pathogenesis: EBV, mycobacterium in immune-compromised patients, human immunodeficiency virus, auto immune and vascular causes. However, the exact cause remains uncertain (6,7).

Splenectomy is usually performed in patients with splenic tumors because imaging techniques cannot exclude malignancy. Due to the size of the tumor and the suspected malignancy, we performed an open splenectomy. Laparoscopic splenectomy may be a useful option for patients with smaller splenic tumors (8). Postoperatively, our patient had no clinical signs or symptoms, and the laboratory tests were normal. Two months later, an ultrasound examination was performed showing absence of any tumor in abdomen. No further treatment was considered necessary.

In conclusion, IMT of the spleen is extremely rare. This uncommon pathology is not associated with specific clinical findings and can be represented as a splenic neoplasm. Currently, no imaging techniques allow preoperative diagnosis. Splenectomy and histiopathologic studies of the specimen allow diagnosis and treatment.

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Baker's asthma: An allergic occupational disease

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Abstract

Baker's asthma is an allergic occupational disease, caused most often from wheat flour inhalation. Herewith we present a case of new-onset work-related asthma in a 27-year-old patient who works in a pizzeria. The patient with nasal congestion, sneezing over and over, runny nose, dyspnea and wheezing, was recently followed up in our clinic. He reported a history of five years with these complaints, or three years after he began to work in a pizzeria. These complaints were present especially in the morning, when he was working. He was free of symptoms when he is not working. Skin prick tests and specific IgE measurements for aeroallergens and trofoallergenes were positive for wheat and wheat flour. Spirometry showed a moderate airflow obstruction. He was diagnosed with baker's asthma. The treatment with inhaled corticosteroids, intranasal corticosteroids and antihistamines was recommended.

Introduction

Baker's asthma is an allergic occupational disease, caused most often from wheat flour inhalation. Baker's asthma is one of the most common forms of occupational asthma, which affects 1-10% of bakery workers (1). It is still a serious occupationally related obstructive airway disease worldwide.

In 1700 Bernardo Ramazzini described respiratory symptoms among bakers caused by exposure to flour dust. However, there are anecdotal references from antiquity describing how Roman slaves working in bakeries protected themselves by using cloth as a primitive respirator to cover their faces because their breathing suffered from inhaling flour (2).

The incidence of baker's asthma among young bakers has been reported to range from 0.3-2.4 cases per 1000 person-years, and an increasing number of asthma cases are being reported among supermarket bakery workers (3). Sixty percent to 70% of bakers with rhinitis or asthma have increased specific IgE levels to wheat, rye, or both flour extracts (4). In France, baker's asthma was ranked the first among cases reported to the national observatory of occupational asthma (5).

The most common cause of baker's asthma is wheat flour sensitization. The specific IgE antibodies most often found in Baker's asthma are against cereal flours such as wheat, rye or barley (table 1).

Table 1. Allergens associated with baker's asthma and rhinitis

Cereal flours	Wheat Rye Barley Hops Rice Maize
Non-cereal flours	Buckwheat Soybean flour
Additives/Enzymes	Amylase Cellulase Xylanase Papain, other proteases Glucose, Oxidase
Nuts	Almonds, Hazelnuts
Color	Carmine red
Egg powder	
Milk powder	
Insects	Flour beetle (<i>tribolum confusum</i>) Flour moth (<i>ephestia Kuenhilla</i>) Cockroach (<i>Blatella spp</i>) Granary Weevill (<i>Sitophilus granaris</i>)
Moulds	Alternaria, Aspergillus
Sesame seeds	

Since the 1970s a variety of enzymes can be added to flour in order to enhance the baking process. Although in minute quantities (typically mg/kg flour), they can cause sensitization and baker's asthma (table 1). The most common enzyme is an amylase of fungal origin. The use of a amylase varies between countries and bakeries; in some enterprises the amylase is routinely added to the flour, in others it is used for some

products only, and in some it is not used at all (6). Other potential sensitizers can be moulds, yeast, eggs, sesame seeds, nuts, and insects, for example (table 1). The occurrence of sensitization to these allergens is less well known than the cases caused by cereal flours or enzymes, and seems to be of marginal importance to the burden of disease in bakers. However, they should be kept in mind in the clinical setting if no sensitization to common

bakery allergens is found. Wheat proteins are subdivided in two fractions: the water/salt-soluble (including albumins and globulins)

and the water/ salt insoluble gluten (containing gliadins and glutenins). The latter represent about

Table 2. The function of main allergens from wheat flour associated with baker's asthma

Protein	S.N	AA	Cys	Function
Acyl-CoA-Oxydase	ACX	644	11	Catalyzes the desaturation of long-chain Acyl-CoAs to 2-trans-enoyl-CoAs
Fructose biphosphate aldolase	FBA	358	7	Fructose-biphosphate aldolase activity
Glycerinaldehyde-3-phosphate dehydrogenases	GAPDH	496	13	Important as a means for generating NADPH for biosynthetic reactions
Thioredoxin	TRX	125	2	Participates in various redox reactions through the reversible oxidation of the active center dithiol to disulfide
Triosephosphate isomerase	TPIS	253	4	Triose-phosphate isomerase activity
Serpin(Serin proteinase inhibitor)	WSZ	398	1	Molecular function:Serine type endopeptidase inhibitor activity
Peroxidase	WSP	332	8	Removal of H ₂ O ₂ , biosynthesis and degradation of lignin, response to environmental stresses
Monomeric alpha-amylase inhibitor	WMAI	121	10	Inhibits exo-alpha-amylase
Dimeric alpha-amylase inhibitor	WDAI	124	10	Inhibits exo-alpha-amylase
Tetrameric alpha-amylase inhibitor	WTAI	119-143	10	Inhibits exo-alpha-amylase
Agglutinine	WGA	186	32	Carbohydrate binding protein that selectively recognizes sialic acid and N-acetylglucosaminyl sugar residues
Lipid transfer protein	LTP	90	8	Enhances the in vitro transfer of phospholipids between membranes and can bind acyl chains
Chymotripsin inhibitor (serine proteinase inhibitor)	WSCI	84	0	Inhibits chymotripsine

80% of all wheat proteins (7). It was assumed a relation between protein solubility and the various clinical manifestations of wheat allergy (8):

- Salt-insoluble proteins might be resistant to digestion during the passage through the stomach and intestines and might cause specific symptoms of food allergy.

- Salt-soluble proteins can be reabsorbed in the respiratory tract, eliciting IgE-mediated allergic reactions. Among bakers the whole flour particles are deposited on the mucosa of bronchi, where the allergens most readily dissolve in bronchial lining fluids.

- Water-soluble proteins can reach mast cells and initiate IgE-mediated reactions.

In addition, however, some insoluble allergens on

the surface of the foreign particles are likely to trigger IgE reactions; either because of direct contact with local mast cells or after enzymes (particularly proteases) or detergents contained in alveolar surfactant or present on the mucosa permits access of allergens that are less readily extractable. Thus far, only few flour allergens have been described at the molecular level: α -amylase inhibitors, acyl-CoA oxidase and fructose-bisphosphate aldolase, a wheat glycoprotein with peroxidase activity, triose-phosphate isomerase (TPIS), and recently thioredoxin, all of which belong to the water/ salt-soluble protein fraction. The water-soluble albumin fractions were believed to represent the most relevant allergens

Current immunological and clinical data point to the α -amylase/trypsin inhibitor family as the main culprit of baker's asthma. The cereal α -amylase/trypsin inhibitor subunits are 12-16-kDa polypeptides with 4-5 intrachain disulphide bridges that are essential for their inhibitory activity. Members of the inhibitor family are restricted to the seed storage tissue (endosperm), and seem to have a common fold (4-5 α -helices and a short antiparallel β -sheet).

Amino acid sequence identity between members of the family ranges from around 30% to 95%. Based on their degree of aggregation, 3 types of α -amylase inhibitors have been identified in wheat flour, namely, monomeric (1 subunit), homodimeric (2 identical subunits), and heterotetrameric (3 different subunits, one of them in two copies) (9). Trypsin inhibitors belong to the monomeric type. Additionally, the interaction between wheat inhibitors and the α -amylase from *Dermatophagoides pteronyssinus* (Der p 4 allergen) suggests that wheat/mite allergen complexes might be present in house-dust mite-infected flours (10).

Besides the salt-soluble allergens discussed above, several of the major water/salt-insoluble wheat flour proteins (prolamins) also appear to be implicated in baker's asthma.

The subunits of the gliadin family are the $\alpha\beta$ -, γ -, and ω -gliadins based on their electrophoresis mobility. The different gliadin subunits share amino acid sequence and 3-dimensional structure homologies (11).

Gliadins can be considered possible allergens associated with baker's asthma. In the case of negative results on routine IgE testing with wheat extract, diagnostic tests with water-insoluble allergens, such as gliadins, should be considered.

Baker's asthma is often preceded by rhinitis, and skin symptoms are often concomitant.

Frequently there is atopy and sensitization to flour and/or enzyme (for example, an amylase).

Immediate hypersensitivity reactions to the ingestion of wheat are not very common and can be divided into two types:

1. Typical IgE-mediated food allergy, in which patients display a variety of clinical symptoms ranging from urticaria/angioedema to vomiting and anaphylaxis, and, sometimes, atopic dermatitis;
2. Wheat-dependent exercise-induced anaphylaxis

(WDEIA), which is a well-defined clinical picture commonly associated with sensitization to a major grain allergen, ω 5-gliadin (Tri a 19), whose IgE-binding epitopes have been identified. Measurement of serum IgE antibodies to recombinant ω 5-gliadin has been proposed as a marker of WDEIA (12). Wheat proteins have also been shown to induce contact urticaria (13) and protein contact dermatitis (14). Cereals form part of the Poaceae family, and there is wide allergenic cross-reactivity between wheat flour and grass pollen (15).

Current diagnostic tests for Baker's asthma include; history, physical examination, skin prick tests, specific IgE measurements, Specific Inhalation Challenge, and bronchial provocation test with methacoline.

The treatment of baker's asthma, as the other forms of asthma consists in the causative agent eviction, drug therapy, and allergen-specific immunotherapy (but other studies are necessary to prove the efficacy of specific immunotherapy with wheat in a patient with baker's asthma).

Case description

A 27-year-old man complaints of nasal congestion, sneezing over and over especially in the morning, runny nose, dyspnea during the night and at work, and wheezing, was recently followed up to our clinic. He has five years with these symptoms, which began after three years that he began working in the pizzeria. At the beginning, for two years he had only runny nose, sneezing and nasal congestion. He was treated several times with antihistamines. The symptoms were present during all the year. The patient reported that the complaints were commonly present when he was working in the pizzeria. He is free of symptoms when he is not working in the pizzeria. His symptoms gradually got worse. Actually, the patient has nasal congestion, sneezing, dry cough, wheezing and dyspnea. The patient has been afebrile. On chest examination sibilances and sonore ronchi were present. The hematological and biochemical profile was normal. Taking into consideration his medical history, we made skin prick tests and specific IgE measurements for aeroallergens and trophoallergenes. The results were the following: skin prick tests for aeroallergens were positive for plantago, helianthus ann, and four cereals mix; skin prick tests for trofoallergenes were positive for wheat and wheat flour; and also prick by prick

with wheat flour resulted positive. The spirometry showed a moderate airflow obstruction, but methacoline test provocation was positive.

The recommended treatment was with inhaled/intranasal corticosteroids and antihistamines. A month after the treatment, a relevant improvement of his symptoms and on spirometry was observed. Taking into consideration his medical history: profession, respiratory symptoms during his work, disappearance of symptoms out of his workplace, positivity of skin tests, spirometry examinations, and results of treatments, Baker's asthma diagnosis was considered.

Our recommendation for the patient was to change his profession; with no wheat flour inhalation. We believe that the eviction of wheat flour inhalation results in clinical recovery of this patient.

Conclusion

Baker's asthma is an important allergic occupational disease, most often caused by wheat flour inhalation. In our case, after the diagnosis, the eviction of the causative agent and treatment (inhaled/intranasal corticosteroids and antihistamines) resulted in a significant improvement of the symptoms.

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The Hague IV World Justice Forum 2013

The Hague World Justice Project Forum for the rule of law,
produced conclusions and messages each one should know.

The Forum provided a venue for live discussion and debate,
tools for measuring the adherence to the rule of law to create.

The World Justice Project has noble goals, aim and mission,
to promote human rights and the rule of law culture transition.

A world justice project network we build, shape and nurture,
by strategic meetings we strengthen the rule of law culture.

Research and scholarship worldwide promote the rule of law,
the Network of the World Justice Project continuously grows.

The rule of law and social justice is a new world's movement,
for human rights awareness and quality of life improvement.

Respecting the human rights, rule of law and justice for all,
it is crucial prerequisite for social-economic prosperity goal.

Universal insurance coverage and accessibility to health care,
to provide food and education for each person everywhere.

The rule of law and human rights is the future of humanity,
and not decisions based on self-righteous power and vanity.

Social justice and human rights need to be everyone intention,
to create peace, culture if respect and corruption prevention.

To protect communities and environment as a natural wealth,
decent standard of living and improvement of public health.

Jobs and shelter, security and freedom to each one to speak,
righteousness in the land, the strong should not hurt the weak.

Not just the lawyers and judges, but all stakeholders to serve,
for the timely delivered justice in the community to preserve.

Accountable government and the civil society organizations,
to strengthen the rule of law by inter-sectoral collaboration.

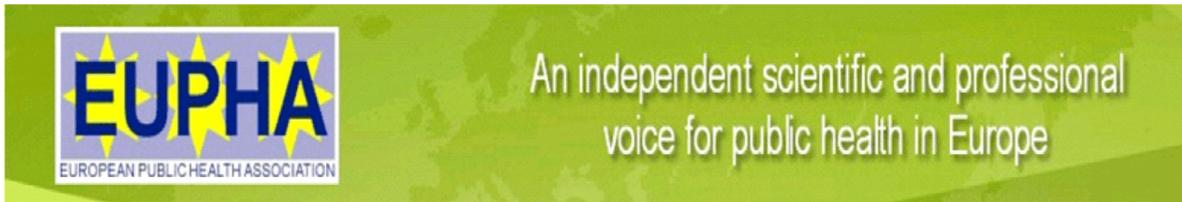
To protect human rights, security of persons and property,
that is foundation for communities of opportunity and equity.

The rule of law is fundamental rights and rules framework,
we have work to do, there's a lot of it and it's a noble work.

Hague,
July 10, 2013

Doncho Donev,
Republic of Macedonia

<http://www.poetry.com/poems/903561>—THE-HAGUE-IV-WORLD-JUSTICE-FORUM-2013



EUPHA Newsletter 8 - 2013
Published: 26 August 2013

In this newsletter:

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Saw Swee Hock School of Public Health, National University of Singapore
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1. 6 th European Public Health Conference – Brussels 13-16 November 2013



Health in Europe: are we there yet?
*Learning from the past, building
the future*

The full programme of Brussels 2013 is now available. For more information:
www.eupha.org/Brussels2013.

Call for presenting your publication – 5 more days left!

During the conference, on Friday 15 November at lunch time, EUPHA is organizing a 60 minute session where the most recent and interesting publications on public health are presented in very short, innovative and creative speeches. Did you or your institute recently publish a ground-breaking book? Are you finalizing a trendsetting report? Do you have cutting-edge results? Then this will be the session to present these!

If you are interested in participating, please send your short summary (200 words) by **1 September** to: office@eupha.org. A small expert committee will examine all entries and make a final selection.

2. EUPHA update

EUPHApedia – Building knowledge and capacity together



At the end of August 2013, we have 2970 documents included in EUPHApedia (no increase). All persons in our database have access to search EUPHApedia, all EUPHA members can upload information on to EUPHApedia.

3. Call for proposals, job opportunities

Cooperative Research Group Leader “Evidence-based Public Health”, University of Bremen, Germany

The University of Bremen, a mid-sized university with approximately 250 professorships and 19,000 students, offers a broad range of disciplines and competes internationally in top-level research. With its ambitious institutional strategy the university was successful in the national Excellence Initiative as one of only eleven universities in Germany.

Cooperative Junior Research Groups funded by the Excellence Initiative strengthen the university's capacity for innovation. They will be established in fields of close collaboration with our highly renowned research partners and thereby offer rewarding research opportunities and career prospects for excellent junior researchers.

Candidates exhibiting excellent doctorate credentials and the ability to successfully design and lead a cutting-edge research project are encouraged to apply. Group leaders will receive a competitive salary and a generous budget for research assistants and other costs directly incurred by the project. Junior group leaders at the University of Bremen can be temporarily granted the title of a professor and the right to independently supervise doctoral theses. Teaching (in English or German) is only required for two hours per week during terms, starting in the second year.

For further inquiries please contact the Dean of the Faculty for Human and Health Sciences, Professor Birgit Volmerg (dekanat-fb11@uni-bremen.de, phone +49-421-218-68770) or Professor Ansgar Gerhardus (ansgar.gerhardus@uni-bremen.de, phone +49-421-218-68800).

Please send your application (with reference number A170/13) not later than 15th September 2013 to dekanat-fb11@uni-bremen.de or Universität Bremen, Dekanin, Fachbereich 11, Postfach 330 440, 28334 Bremen.

More information:

<http://www.uni-bremen.de/universitaet/die-uni-als-arbeitgeber/stellen0/job/cooperative-research-group-leader-1170.html?cHash=0bdeb85674dcbab22476c89a9db63885>

Saw Swee Hock School of Public Health, National University of Singapore

The Saw Swee Hock School of Public Health is looking for a full-time Assistant and Associate Professors under the Tenure Track within the Health systems and policy (HSP) domain and Health education and promotion (HEP) domain.

For the HSP position we are looking candidates with experience in chronic disease management with special emphasis one or more of the following areas:

1. health services research
2. medical sociology
3. integrated care
4. patient centred medical homes
5. telemedicine

More information: <http://www.sph.nus.edu.sg/images/HSP%20NUS%20V1%20JAad.pdf>

For the HEP position we are looking for candidates engaged in research on behavioural and community interventions related to obesity prevention, with special emphasis in these areas:

1. To assist in positive habit formation. We hope to develop new ideas and interventions that will help individuals to form health promoting habits, whether dietary, physical activity, or self-care
 2. To pilot and develop effective, sustainable and implementable multi-component programs in the community, home, and worksite settings
- More information: <http://www.sph.nus.edu.sg/images/HEP%20NUS%2031072013.pdf>

Both positions will be open until filled.

The Institute of Social and Preventive Medicine (ISPM) at the University of Bern

Applications are invited for a Research Assistant (80-100%)

Project description:

The project includes the analysis of availability and validity of quality indicators of secondary base data in Swiss health care. Administrative data of Swiss health insurers, federal institutions and of physician organizations have to be pooled into a database. Quality indicators defined by the OECD and by the Swiss Federal Office of Public Health have to be extracted from the data and differences across regions and across different providers will be analyzed.

Tasks:

- To collect data from various sources and to set up a standardized database
- To identify quality indicators and to perform quantitative analyses aimed at regional differences and different provider characteristics
- To prepare manuscripts in English and German

Preferred Profile:

- Master degree in public health, health science or related fields
- Very good knowledge of relational databases and experience in quantitative data analysis are a prerequisite. Preferences are given to candidates with good knowledge of SAS.

The appointment is available as of Sept 1. 2013 or upon agreement. The duration of the position is three years. The salary is according to the cantonal guidelines of the University of Bern. Applicants should submit a CV, references and diplomas by email to André Busato (abusato@ispm.unibe.ch) before August 30, 2013.

More information: www.ispm.unibe.ch

SARETI Masters scholarships in research ethics 2014

SARETI is a University of KwaZulu-Natal (Pietermaritzburg) project, funded by the Fogarty International Center of the US National Institutes of Health to offer advanced learning in health research ethics. The programme is aimed at scientists, members of Research Ethics Committees/IRBs, public health personnel, social scientists, philosophers, ethicists, health journalists, lawyers, and other professionals whose work impacts on health.

SARETI is an African programme in health ethics that offers modular, flexible and hands-on learning. Trainees are enabled to develop the expertise required to ensure that health research in Africa has the welfare of individuals and of communities as its primary focus. SARETI's educational programmes vary from

one-week intensive short courses, to a three-week programme aimed at Research Ethics Committee members, offering a Masters programme (an MSocSci with majors in health research ethics).

SARETI announces the availability of scholarships that offer full financial support (travel, course fees, accommodation, stipends) for four Masters' degree students annually. The scholarships are available to professionals involved in health research ethics and health research and who are resident in Africa. Applications from self-funded or sponsored students are also welcome.

Applications for the 2014 programme (which starts in February 2014) are invited. The closing date for applications is Friday, 30 August 2013. For further information and application forms, visit SARETI's website:<http://sareti.ukzn.ac.za> or contact: Mrs Carla Pettit, School of Applied Human Sciences, College of Humanities, University of KwaZulu-Natal at pettitc@ukzn.ac.za

4. Interesting News

Master course: International Master in Quality Management in the European Healthcare Systems

The enrollment of the 3rd edition of the International **Master in Quality Management in the European Healthcare Systems** is now open and the course will start the following October 2013.

The third edition is meant to be even more substantial, because The University of Klagenfurt, The University of Zagreb, and The University of Primorska (SLO) joined the already rich partnership headed by The University of Udine, Sanicademia, The National Slovenian Institute of Public Health and the specialization schools in public healthcare of the University of Trieste, Udine, Padua and Verona with the technical support of the Consorzio Friuli Formazione.

The 18-month Master Course will be held from October 2013 to April 2015 and has a value of 60 university credits (60 ECTS).

The aim of the Master Course is to train expert professionals in promoting continual improvement of quality in healthcare systems. The participants will acquire skills in quality management and measurement in healthcare, change management and human resources development, risk management, project management and process management.

Deadline of Admission application: 30 September 2013.

The master is a unique opportunity at European level because:

- Will help improve the healthcare service quality in this European region, as well the education of the expert network in this field
- Has a faculty of international excellence, composed of professors from all around Europe and North America
- It includes a network of hospitals and healthcare organizations on a European level, ready to host participant's work experience at the end of the training period

For more information: www.qualityhealthcaretraining.eu

RSPH publication: Arts, Health and Well Being Beyond the Millennium: How far have we come in 15 years?

In June 2013, the Royal Society for Public Health (RSPH) published on its website a freely accessible, illustrated, fully referenced, 119-page report: “*Arts, Health and Well Being Beyond the Millennium: How far have we come in 15 years?*” The report updates information given in two earlier reports published by the Nuffield Trust in 1999 and 2002, both of which are also freely accessible by hypertext links from it. This report was prepared by a Working Group set up by the RSPH, in support of a three-day international conference, “*Culture, Health and Well-Being*”, held in Bristol, England, 24-26 June 2013, organised by South West Arts and Health and the RSPH, and attended by 350 participants from 22 different countries.

Section 5 of the report explores the question: “*Where do we go from here?*”. It does so in the context of needs in international public health for us to address values, valuing and value systems and develop cultural barometers, and in the UK to support work of the newly-formed organisation, Public Health England, and contribute to recent National Institute of Health and Care Excellence (NICE) guidance on introducing public health into workplaces. The report can be accessed and freely downloaded at: www.RSPH.org.uk/artsandhealth . Further information about this report and work connected with it is available by e-mail: Robin.Philipp@UHBRistol.nhs.uk

5. EUPHA member updates

French Society of Public Health – www.sfsp.fr/

La Société Française de Santé Publique a le plaisir d’annoncer son prochain congrès biennal, qu’elle organise cette année avec l’Association des Epidémiologistes de Langue Française, sur le thème de la prévention, du 17 au 19 octobre 2013 à Bordeaux.

Le Congrès est ouvert à toutes les approches (prévention primaire, secondaire, tertiaire, universelle, sélective, dans les champs de l’environnement, des comportements, du soin...), à tous leurs acteurs (représentants institutionnels, acteurs de proximité, professionnels ou associatifs, chercheurs) et à toutes les disciplines de la recherche (médecine, santé publique, sociologie, psychologie, économie, géographie, sciences de l’information et de la communication...).

Plus d’informations sur l’ensemble du programme

6. Upcoming courses and conferences



Going International promotes training and further education for experts and newcomers in public health and humanitarian assistance around the globe. The flagship of Going International is the online education database »medicine & health«. It contains international courses, master programmes and conferences in the field of medicine and international health. Due to the large number and variety of training events the education database enables health professionals to find their educational event at their fingertips. For further information: www.goinginternational.eu/en/online-datenbank/ Going International is an official partner of EUPHA.

Title: 2nd World Congress of Clinical Safety
Organizer: International Association of Risk Management in Medicine
Dates: 12 -13 September 2013
Place: University of Heidelberg, Germany
Deadline: Registration 31 August 2013
More info: [http:// www.iarmm.org/ 2WCCS/ \(2WCCS\)Congress_Guide.pdf](http://www.iarmm.org/2WCCS/(2WCCS)Congress_Guide.pdf)

Title: Quality and Safety in Population Health and Healthcare
Organizer: ISQUA
Dates: 13 - 16 October 2013
Place: Edinburgh, UK
More info: <http://www.isqua.org/conference/edinburgh-2013/>

Title: “Qualitätssicherung in der Gesundheitsförderung”
(Quality assurance in health promotion)
Organizer: Dept for Evidence-based Medicine and Clinical Epidemiology/
 Danube University Krems
Dates: 30 - 31 October 2013
Place: Krems, Austria
Language: German
More info: [http:// www.donau-uni.ac.at/ de/ studium/ workshopqualitaetssicherungsgesun-
 dheitsfoerderung](http://www.donau-uni.ac.at/de/studium/workshopqualitaetssicherungsgesundheitsfoerderung)

Title: GIS for Public Health?
Organizer: SPH+ PhD Program in Public Health
Dates: 8 - 21 November 2013
Place: University of Basel, Swiss TPH, Switzerland
More info: http://www.ispm-unibasel.ch/ssphplus/spip.php?page=phd_courses&lang=en

Title: 23rd annual congress of the European Childhood Obesity Group (ECOG)
Organizer: European Childhood Obesity Group
Dates: 13-15 November 2013
Place: Liverpool, UK
More info: www.ecog-obesity.eu

Title: Genes - Are They Key to Public Health?
Organizer: SSPH+ PhD Program in Public Health
Dates: 26 November and 4 December 2013
Place: University of Basel, Swiss TPH, Switzerland
More info: [http:// www.ispm-unibasel.ch/ ssphplus/ spip.php?page=phd_courses&lang=en](http://www.ispm-unibasel.ch/ssphplus/spip.php?page=phd_courses&lang=en)

Title: Concepts of Epidemiology (5-Day Course)

Date: 9 - 13 December 2013

Place: Edinburgh, UK

Organiser: University of Edinburgh

More info: <http://www.lifelong.ed.ac.uk/epidemiology>**Title: Qualitative Research in Health: Where Quantitative Methods Can Not Reach**

Organizer: SSPH+ PhD Program in Public Health

Dates: 12 - 14 February 2014

Place: University of Basel, Swiss TPH, Switzerland

More info: http://www.ispm-unibas.ch/ssphplus/spip.php?page=phd_courses&lang=en**Title: Crossing Boundaries – Partnerships for Global Urban Health**

Organizer: The International Conference on Urban Health

Dates: March 4 - 7 March 2014

Place: Manchester, United Kingdom

More info: www.icuh2014.com**Title: 2nd Annual International Conference on Health & Medical Sciences**

Organizer: The Athens Institute for Education and Research (ATINER)

Dates: 5 – 8 May 2014

Place: Athens, Greece

Deadline: **Abstract submission 7 October 2013** by email, health@atiner.grPlease use the submitting form at <http://www.atiner.gr/2014/FORM-HSC.doc>More info: <http://www.atiner.gr/healthsciences.htm>

7. European Commission news

Alcohol

Assessment of the added value of the EU strategy to support Member States in reducing alcohol-related harm - Final report

Communicable diseases

ECDC marks World Hepatitis Day 2013 with first EU-wide hepatitis B and C surveillance data

Cross-border care

Patients' rights in cross-border healthcare: results of the public consultation on the implementation of European Reference Networks (ERN) (Directive 2011/ 24/ EU)

Events

Conference: Applying behavioural insights to policy-making Registration form available

Health indicators

The European Core Health Indicators (ECHI) shortlist of 88 health indicators identified by policy area
European Core Health Indicators (ECHI) - Relevance by policy areas
Population indicators and Old-age-dependency ratio (ECHI 1) updated with 2012 data and some EU28 aggregates

Major and chronic diseases

New events on cancer

Nutrition and physical activity

Eighteenth plenary meeting of the High Level Group on Nutrition and Physical Activity, Brussels, 20 June 2013 - Contributions now available

Preparedness and response

Health-EU newsletter 113: Citizens better protected from cross-border health threats

Rare diseases

2013 Report on the State of the Art of Rare Diseases Activities in Europe - EUCERD Joint Action
Commission Decision setting up an expert group on rare diseases adopted on 30 July 2013 - Call for expression of interest for the members will follow
New events on rare diseases

8. European Centre for Disease Prevention and Control

Eurosurveillance, Volume 18, Issue 34, 22 August 2013

In this issue: German study concludes that to reduce Chlamydia trachomatis prevalence in young girls, sex education needs to be enhanced before sexual debut.

This week's table of contents:

RAPID COMMUNICATIONS

Investigation of an imported case of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection in Florence, Italy, May to June 2013

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20564>

Acute hepatitis E complicated by Guillain-Barré syndrome in Portugal, December 2012 – a case report

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20563>

RESEARCH ARTICLES

Lymphogranuloma venereum among men who have sex with men in the Netherlands: regional differences in testing rates lead to underestimation of the incidence, 2006-2012

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20561>

Risk factors for Chlamydia trachomatis infection in adolescents: results from a representative population-based survey in Germany, 2003–2006

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20562>

Eurosurveillance, Volume 18, Issue 33, 15 August 2013

In this issue: Increased iGAS incidence 2012 and 2013 in Ireland supports increase in Northern Europe as previously reported from Finland, Norway, Sweden and England

This week's table of contents:

RAPID COMMUNICATIONS

A surge of MDR and XDR tuberculosis in France among patients born in the Former Soviet Union

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20555>

Increased incidence of invasive group A streptococcal disease in Ireland, 2012 to 2013

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20556>

Increase in gonorrhoea among very young adolescents, Catalonia, Spain, January 2012 to June 2013

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20560>

RESEARCH ARTICLES

Mumps epidemiology in Germany 2007-11

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20557>

NEWS

Journal of Open Public Health Data launched

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20558>

WHO launches World health report 2013

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20559>

Eurosurveillance, Volume 18, Issue 32, 08 August 2013

In this issue: A success story describing the impact of introducing two-dose varicella vaccination in Navarre, Spain

This week's table of contents:

RESEARCH ARTICLES

Impact of universal two-dose vaccination on varicella epidemiology in Navarre, Spain, 2006 to 2012

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20552>

SURVEILLANCE AND OUTBREAK REPORTS

Systematic review of tattoo-associated skin infection with rapidly growing mycobacteria and public health investigation of a cluster in Scotland, 2010

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20553>

International infectious disease surveillance during the London Olympic and Paralympic Games 2012: process and outcomes

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20554>

Eurosurveillance, Volume 18, Issue 31, 1 August 2013

In this issue: Several reports on antimicrobial resistance in Europe

This week's table of contents:

RAPID COMMUNICATIONS

Outbreak of NDM-1-producing *Acinetobacter baumannii* in France, January to May 2013

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20547>

First report of IMI-1-producing colistin-resistant *Enterobacter* clinical isolate in Ireland, March 2013

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20548>

SURVEILLANCE AND OUTBREAK REPORTS

Intercontinental spread of OXA-48 beta-lactamase-producing *Enterobacteriaceae* over a 11-year period, 2001 to 2011

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20549>

RESEARCH ARTICLES

Silent hepatitis E virus infection in Dutch blood donors, 2011 to 2012

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20550>

MISCELLANEOUS

In the national epidemiological bulletins – a selection from current issues

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20551>

Eurosurveillance, Volume 18, Issue 30, 25 July 2013**In this issue: Leishmaniasis in Europe: Part II**

This part of the special issue presents a recent leishmaniasis outbreak in Madrid, data from the Netherlands, the role of indigenous hosts and aspects related to treatment.

This week's table of contents:**EDITORIALS**

Epidemiological surveillance of leishmaniasis in the European Union: operational and research challenges
<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20539>

SURVEILLANCE AND OUTBREAK REPORTS

Re-emergence of leishmaniasis in Spain: community outbreak in Madrid, Spain, 2009 to 2012

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20546>

Imported leishmaniasis in the Netherlands from 2005 to 2012: epidemiology, diagnostic techniques and sequence-based species typing from 195 patients

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20544>

RESEARCH ARTICLES

Molecular typing of *Leishmania infantum* isolates from a leishmaniasis outbreak in Madrid, Spain, 2009 to 2012

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20545>

Leishmania infantum in free-ranging hares, Spain, 2004-2010

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20541>

Heat-shock protein 70 gene sequencing for *Leishmania* species typing in European tropical infectious disease clinics

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20543>

PERSPECTIVES

Leishmaniasis in the era of tumor necrosis factor alpha antagonist therapy – a research agenda for Europe

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20542>

REVIEW ARTICLES

The role of indigenous phlebotomine sandflies and mammals in the spreading of leishmaniasis agents in the Mediterranean region

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20540>

NEWS

LeishMan: harmonising diagnostic and clinical management of leishmaniasis in Europe

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20538>

MISCELLANEOUS

Authors' correction for Euro Surveill. 2013;18(27)

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20537>

Full table of contents:

<http://www.eurosurveillance.org/>

9. WHO publications

WHO/ Europe highlights - August 2013

FEATURE

Breastfeeding mothers need peer counselling

Breastfeeding can benefit mothers' health, reduce infant mortality and promote child development. For World Breastfeeding Week (1–7 August), WHO and its partners highlight the importance of peer counselling and community support systems.

10 facts on breastfeeding

Infant and young child nutrition

Analysing barriers for breastfeeding

NEWS

Viral hepatitis requires more attention in the WHO European Region

Viral hepatitis affects millions of people in the WHO European Region. Types B and C cause the main burden of disease, and kill over 120 000 people in Europe every year. Urgent action is needed to address this neglected epidemic. 28 July 2013 is World Hepatitis Day.

MERS-CoV not yet a public health emergency, advises emergency committee

The emergency committee convened by the WHO Director-General under the International Health Regulations (IHR) to assess the situation of Middle East respiratory syndrome coronavirus (MERS-CoV) met on 17 July 2013. The members unanimously decided that the situation does not yet meet the conditions for a public health emergency of international concern. The Director-General agreed with the committee that the situation nevertheless causes great concern.

Pharmaceutical innovation must align with patient needs, says new report

For the first time, more people in European Union countries are aged over 65 years than under 15 years. Much of the rest of the world, including low-and middle-income countries, is moving in a similar direction. A new WHO report calls for pharmaceutical researchers to adjust their research and development work to take account of this shift.

New guidance on promoting physical activity in socially disadvantaged groups

Today, WHO/ Europe launches a policy summary and full report on this topic. Scientific evidence shows that physical inactivity is a leading risk factor for ill health, and that socially disadvantaged groups tend to have low levels of activity.

Significant progress in implementing activities for Roma health

On 25–26 June 2013, with WHO/ Europe, the Office of the High Commissioner for Human Rights (OHCHR) organized the second meeting of the Roma civil-society group on the right to health.

How hot weather affects health

Heat can trigger exhaustion, confusion and even heart attacks, as well as worsen existing conditions, such as cardiovascular and respiratory diseases. The harmful effects of hot weather are largely preventable.

More news

RECENTLY PUBLISHED

Climate change and health: a tool to estimate health and adaptation costs

This economic analysis tool supports adaptation planning to protect health from the negative effects of climate change in European Member States. It is based on a review of the science, and provides step-by-step guidance on estimating: (a) the costs associated with damage to health due to climate change; (b) the costs for adaptation in various sectors to protect health from such damage; and (c) the efficiency of adaptation measures: the cost of adaptation versus the expected returns, or averted health costs.

Clinical guidelines for chronic conditions in the European Union

Chronic noncommunicable diseases make up a large part of the burden of disease and make a huge call on health systems' resources. Clinical guidelines are one of the ways European countries have tried to respond and to ensure a long-term perspective in managing them and addressing their determinants. This book explores those guidelines and whether they actually affect processes of care and patients' health outcomes.

Physical activity promotion in socially disadvantaged groups: principles for action. Policy summary

This brochure provides – based on a review of evidence, case studies and national policies – suggestions for national and local action and policies to support physical activity in these groups. It also identifies gaps in evidence to be addressed by future research.

More publications

UPCOMING EVENTS

Sixty-third session of the WHO Regional Committee for Europe

16–19 September 2013, Çe°me Izmir, Turkey

The sixty-third session of the WHO Regional Committee for Europe will take place on 16–19 September 2013 in Çe°me Izmir, Turkey. Delegations from the 53 Member States in the WHO European Region will meet to discuss and agree on issues relating to public health in the Region, as well as the management and organization of WHO/ Europe.

10th Flagship Course on Health Systems Strengthening

21–30 October 2013, Barcelona, Spain

The Course's special theme is how to strengthen health systems to address the growing burden of noncommunicable diseases, such as cardiovascular diseases, diabetes and cancer. The application deadline is 10 September 2013.

2nd Florence International Training (FIT) Course

17–22 November 2013, Florence, Italy

Applications are invited for the Course, which will address the impact of the economic crisis on the determinants of health and response strategies for health professionals in Europe. The deadline for receiving applications is 30 August 2013.

RECENT EVENT

WHO European Ministerial Conference on Nutrition and Noncommunicable Diseases in the Context of Health 2020

4–5 July 2013, Vienna, Austria

Health ministers, experts and representatives of civil-society and intergovernmental organizations met in Vienna on 4–5 July 2013, and signed the Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020.

FROM COUNTRIES

Russian Federation helps strengthen malaria surveillance across Regions

WHO reviews the national tuberculosis control programme in Tajikistan

Assessing health of mothers and newborns in the Republic of Moldova

Caucasian countries make plans to end measles outbreaks
WHO, Greece sign agreement on support programme for health reform

New publications issued by WHO – July 2013

We are pleased to provide you with the list of WHO information products recently released. Please click on Just published

You can also consult our information products catalogues in pdf format or select a subject catalogue from our e-commerce web site: WHO Catalogues

Please note that our new Spring 2013 Catalogue of WHO Information Products is now available online:

Pocket Book of Hospital Care for Children. Second Edition

This bestselling Pocket Book is for use by doctors, nurses and other health workers who are responsible for the care of young children at the first level referral hospitals. This second edition is based on evidence from several WHO updated and published clinical guidelines. It is for use in both inpatient and outpatient care in small hospitals with basic laboratory facilities and essential medicines. In some settings, these guidelines can be used in any facilities where sick children are admitted for inpatient care.

Manual of Diagnostic Ultrasound. Second Edition, Volume 2

This new volume, which extensively covers modern diagnostic and therapeutic ultrasonography, will be of great use to medical professionals in both developed and developing countries. Volume 2 covers paediatric examinations, gynaecology and musculoskeletal examinations, as well as therapy.

Manual of Diagnostic Ultrasound. Second Edition, Package Volume 1 & 2

Economics of the Social Determinants of Health and Health Inequalities (The)

This WHO resource book explains, illustrates and discusses the economic arguments that could (and could not) be put forth to support the case for investing in the social determinants of health on average and in the reduction in socially determined health inequalities.

Strengthening Road Safety Legislation

This manual describes methods and resources for practitioners and decision-makers to use for enacting new laws or regulations or amending existing ones as part of a comprehensive road safety strategy.

Handbook on Health Inequality Monitoring

This Handbook is a user-friendly resource, developed to help countries establish and strengthen health inequality monitoring practices.

WHO Expert Consultation on Rabies

The information in this new report should be considered the most current data on rabies prevention and control.

Systematic Screening for Active Tuberculosis

This document presents the first comprehensive assessment by WHO of the appropriateness of screening for active TB since the recommendations made in 1974 by the Expert Committee.

Health Literacy. The Solid Facts

This report identifies practical and effective ways public health and other sector authorities and advocates

can strengthen health literacy in a variety of settings, including educational settings, workplaces, marketplaces, health systems, new and traditional media and political arenas.

Eastern Mediterranean Health Journal, Vol. 19 No. 6, 2013

The EMHJ was launched in 1995 as a peer-reviewed medical journal. Starting January 2010, the Journal has been given a new format and is now published monthly. The EMHJ serves as a forum for the dissemination of biomedical information through the publication of scientific research papers on a range of topics related to public health, with particular relevance to the Eastern Mediterranean Region.

Physical activity promotion in socially disadvantaged groups: principles for action. Policy summary - Available in English, French and German

Over the past few years, the promotion of physical activity has been more widely recognized as a priority for public health action in Europe and many countries have responded by developing policies and interventions to support it. The WHO Regional Office for Europe carried out a project to support and further enhance evidence and networking on physical activity; a substantial part was the development of guidance on promoting physical activity in socially disadvantaged groups, with a focus on the role of healthy environments. This brochure presents the main conclusions of this part of the project and provides – based on a review of evidence, case studies and national policies – suggestions for national and local action and policies to support physical activity in these groups. It also identifies gaps in evidence to be addressed by future research.

The Physical Activity and Networking (PHAN) project was co-funded by the European Union in the framework of the Health Programme 2008-2013. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

For more information about the book, how to order and a link to the electronic version: <http://www.euro.who.int/en/what-we-publish/abstracts/physical-activity-promotion-in-socially-disadvantaged-groups-principles-for-action.-policy-summary>

ALBANIAN MEDICAL JOURNAL – INSTRUCTIONS FOR AUTHORS

Scope of the Albanian Medical Journal (Revista Mjekësore)

Albanian Medical Journal (Revista Mjekësore) is an international peer reviewed journal open to scientists from all fields of health sciences. Contributions that enhance or illuminate public health disciplines are particularly welcome. Furthermore, our special interest lies in public health and medical developments in transitional countries of the Western Balkans. From this point of view, we aim to provide a medium for reporting scientific findings to researchers from Southeast Europe, particularly Albania and Kosovo, who otherwise would face enormous difficulties in publishing their articles elsewhere.

Manuscript Types

The Albanian Medical Journal (Revista Mjekësore) publishes five types of manuscripts:

- original research reports;
- reviews;
- brief communications;
- case reports, and;
- book reviews:

1. Original research reports have a maximum of 3000 words (excluding abstract, tables/ figures and references), a maximum of 4 tables/ figures, a structured abstract of no more than 250 words, and up to 50 references. Such full-length manuscripts typically describe investigations related to different aspects of the health field. These may include randomized trials, intervention studies, cohort studies, case-control studies, epidemiologic assessments, other observational studies, cost-effectiveness analyses and decision analyses, and studies of screening and diagnostic tests. Each manuscript should clearly state an objective or hypothesis; the design and methods (including the study setting and dates, patients or participants with inclusion and exclusion criteria and/or participation or response rates, or data sources, and how these were selected for the study); the essential features of any interventions; the main outcome measures; the main results of the study; a comment section placing the results in context with the published literature and addressing study limitations; and the conclusions. Criteria include relevance of research question, quality of design, sound implementation procedures, thorough outcome analysis of research findings, and implications for practice and policy.

2. Reviews are usually solicited by the editors, but we will also consider unsolicited material. Please contact the editorial office before writing a review article for the Albanian Medical Journal (Revista Mjekësore) in order to use the preferred review format. All review articles undergo the same peer-review and editorial process as original research reports. They should include up to 50 references and have 2000-2500 words (excluding abstract, tables/figures and references) providing a clear, up to date account of the topic in the field being covered. The abstract for reviews should be unstructured and should contain no more than 200 words. The review should include a broad update of recent developments (from the past 3-5 years) and their likely clinical applications in primary and secondary care. It should stimulate readers to read further and should indicate other sources of information, including web based information. The article should also try to highlight the bridge between primary and secondary care and offer specific information on what public health specialist or general practitioners should know about certain diseases or conditions.

3. Brief communications are reports of no more than 1500 words, 10 references and 2 tables/ figures. Brief Communications begin with a brief unstructured abstract of no more than 100 words.

4. Case reports should be drawn from an actual patient encounter, rather than a composite or fictionalized description. Case reports have a maximum of 1200 words and should include: introduction, aim, case description, discussion/conclusion and up to 10 references.

5. Book reviews (up to 1000 words) provide reviews of current books and other publications of interest to individuals involved in public health and medicine. Only reviews of recently published books will be considered. Book reviews are solicited by invitation; however, persons interested in doing a review may contact the editors.

Manuscript Preparation

Manuscripts should meet the general requirements agreed upon by the International Committee of the Medical Journal Editors, available at www.icmje.org. Contributions should be organized in the following sequence: title page, abstract, text (Introduction, Methods, Results, Discussion), source of funding, acknowledgments, conflict of interest statement, authors' contributions, references, tables, figures.

Title page

The title page should contain the following information:

- The article title (concise, yet comprehensive);
- Full names (first, middle [if applicable] and last names) of all authors;
- Names of the department(s) and institution(s) to which the work should be attributed. If authors belong to several different institutions, superscript digits should be used to relate the authors' names to respective institutions. Identical number(s) in superscript should follow the authors' names and precede the institution names;
- A short running head of not more than 100 characters (count letters and spaces);
- The name and mailing address of the corresponding author, telephone and fax numbers, and e-mail.

Abstract

The abstract for full-length articles (original research reports) should contain no more than 250 words structured in four headings: Aims, Methods, Results, and Conclusion. The Abstract should be followed by 3 to 5 keywords.

Text

Introduction: In the Introduction section, the contributors should briefly introduce the problem, particularly emphasizing the level of knowledge about the problem at the beginning of the investigation. At the end, authors should provide a short description of the aim of the study, specific objectives and study hypotheses.

Methods:

In the Methods section, details regarding the material, samples, methods and equipment used in the study should be included, so that another individual could repeat the work. The selection of the observational or experimental participants (patients or laboratory animals, including controls) should be stated clearly, including eligibility and exclusion criteria and a description of the source population.

Subsequently, the period of research and the institution where it was conducted should be clearly mentioned. Papers covering research on human or animal subjects should contain a statement indicating patient permission and clearance by the institute research or ethics committee or animal experimentation committee.

The methods and procedures should be given in sufficient detail to allow reproduction of the results. Give references

to established methods, including statistical methods; provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration.

Results:

In this section author should describe the main findings in the text as well as the particular statistical significance of the data, and refer the reader to the tables and figures, implying that details are shown there. Information on significance and other statistical data should preferably be given in the tables and figures. Do not combine the Results and Discussion sections for full-length papers.

Discussion:

This section should not repeat results. The discussion section should discuss study findings, and interpret them in the context of other trials reported in the literature providing evidence or counterevidence. In this way the validity of the results and the significance of the conclusions for the application in further research are assessed, with respect to the hypothesis, relevance of methods, and significance of differences observed.

References

The Albanian Medical Journal (Revist Mjekësore) employs the ICMJE recommendations for reference formatting (http://www.nlm.nih.gov/bsd/uniform_requirements.html), with sequential numbering in the text, and respective ordering within the list. References cited in the manuscript are listed in a separate section immediately following the text. The authors should verify all references. Consult Index Medicus or PubMed (<http://www.ncbi.nlm.nih.gov/entrez/>) for standard journal abbreviations.

Each reference should be numbered, ordered sequentially as they appear in the text, methods, tables, figure, and legends. When cited in the text, reference numbers are in parenthesis. Only one publication can be listed for each number. Only articles that have been published or submitted to a named publication should be in the reference list. Published conference abstracts, numbered patents and preprints on recognized servers are not encouraged to be included in reference lists.

All authors should be included in reference lists unless there are more than seven, in which case only the first six authors should be given followed by 'et al.'

Examples of proper referencing:

Citing a journal article:

1. Roshi E, Pulluqi P, Rrumbullaku L, Bejtja G, Bregu A, Ylli A. Trends of smoking in Albania during 2000-2010. *Croat Med J* 2003;12:639-42.
2. Smith AT, Haiden S, Seman RE, et al. Public health challenges in a transitional country in Southeast Europe. *Eur J Public Health* 2008;38:938-46. 4

Citing a book:

Trimi G, ed. *Albania: Facts and figures*. Tirana, AL: Albanian Society of Medical Doctors; 2010.

Book chapter:

Trimi G, ed. *Albania: Facts and figures*. Tirana, AL: Albanian Society of Medical Doctors; 2010:948-59.

Online Journals:

Larva A, Keci M. Diabetes and lifestyle patterns in transitional Kosovo. *BMJ*. 2011;339:737. <http://www.bmj.com/cgi/content/full/339/7596/737>. Accessed September 10, 2012.

Tables

Tables should bear Arabic numerals. Each table should be put on a separate page. Tables should be self-explanatory, with an adequate title (clearly suggesting the contents), and logical presentation of data. The title should preferably include the main results shown in the Table. For footnotes use the following symbols, in this sequence: *, †, ‡, §, II, ¶, **,.....

Figures

Figures should be numbered in sequence with Arabic numerals. The legend of a figure should contain the following information:

- (a) the word “Figure”, followed by its respective number;
- (b) figure title containing major findings presented in the figure.

Writing Style

- Articles should be written in English (spellings as in the Oxford English Dictionary), Times new Roman, size 12, double spaced, using left alignment.
- Set all margins to 2,54 cm.
- Format for A4 paper.
- Type all copy upper and lower case – do not use all capitals or small capitals.
- Do not use footnotes.

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Acceptance Criteria and Conditions of Publication

Authors are encouraged to write in a manner that is maximally communicative, interesting, and informative. Manuscripts should be submitted solely to the Albanian Medical Journal (Revista Mjekësore) and should not be considered for publication elsewhere, nor should they have been previously published. Consideration for publication can be given to material that has previously had limited circulation elsewhere. If an article has appeared previously in any form, authors must clearly indicate this in their cover letter. Include copies of potentially duplicative material that has been previously published and provide links to duplicative material on the Internet.

Manuscript Submission

All manuscripts should be submitted by e-mail at: AMJ@ishp.gov.al

The submission should be accompanied with a Letter to the Editors (a separate Word document) stating the following:

- Manuscript type (original research; review; brief communication; case report; book review).
- Major findings of the research work.
- Novelty and relevance of the manuscript.

All manuscripts submitted to the Albanian Medical Journal will be regularly analyzed by plagiarism detection software. In-house decision will be within 7-10 working days.

If manuscripts are sent for external peer-review, authors will be notified about editorial decision no later than 8 weeks after the date of manuscript submission.

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