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WORK-RELATED AND NON WORK-RELATED DETERMINANTS FOR WORKABILITY OF THE POLISH OVER-50S

Marzena Malińska*

*Central Institute for Labour Protection – National Research Institute, USA

Introduction: Over the recent years the problem of an ageing society has been a topical subject to widespread debate. According to the data from the 2010 European Working Conditions Survey (EWCS 2010) only 61% of Polish older workers would be able to continue working at the age of 60. The basic condition which renders a professional activity possible is ability to perform work tasks. Individual decisions to cease this activity are, to a large extent, dependent on the subjective assessment of inability to work.

Materials and Methods: A questionnaire survey covered 598 men and 469 women over 50 years of age employed in a number of sectors, i.e. administration, industrial processing, trade, construction as well as health care and social care. The respondents assessed their workability by filling in a questionnaire designed to assess Work Ability Index (WAI). They characterised their work in terms of psychosocial and physical work requirements, lifestyle, chronic fatigue and mental health. The multiple logistic regression model was used to assess an influence of the examined factors on the risk of occurrence of low or moderate work ability.

Results: Polish older workers were found to have good (44.4%), moderate (36.4%) or excellent (13.4%) work ability. A statistically significant correlation was found between work ability and the type of work and education. Drawing on the analysis of logistic regression, it was concluded that with the deterioration of older workers' mental health (-0.11 ± 0.02), the increased priority of work (-0.14 ± 0.03) and the increased frequency with which older workers resort to the over-the-counter medications (0.09 ± 0.04), their work ability tended to deteriorate. In turn, increased absenteeism (0.77 ± 0.09) and an increased level of supervision over the work performed (0.03 ± 0.01) was found to have a positive effect on work ability.

mamal@ciop.pl

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TOOTH BRUSHING HABITS AND DMFT VALUES OF PRESCHOOLS STUDENTS IN MERAM

Lütfi Saltuk Demir^a, Mehmet Uyar^a, Murat Soganci^b, Meral Demirci^b, Yusuf Kenan Boyraz^a, Kübra Gençaga^a, Yasemin Durduran^a and Tahir Kemal Sahin^a^aNecmetin Erbakan University, Faculty of Medicine. Department of Public Health: Yunus Emre St, Turkey^bDirectorate of Public Health:Selcuklu, Turkey

Oral and dental health problems are a major public health problems. it is possible to significantly reduce the oral health problems, with preventive oral health care practices and acquired toothbrushing habits at an early age. This study aimed to evaluate the dmft value and toothbrushing habits , as a result of oral and dental health screening in preschools students. This descriptive study was conducted at 2014-2015 academic period in 96 preschools Meram district of Konya. Oral and dental health screening was done that 3163 students have been reached from 4189 students. %52.8 of the students were boy. 50.6% of students were regular toothbrushing habits and toothbrushing habits was significantly higher in girls (p=0,01). 14.3% of students who participated in the health screening was completely healthy in terms of dental health (didn't have; decayed, filled and missing teeth). The total number of decayed teeth 8767, number of missing primary teeth 5051, the number of filled teeth 795 in 3163 students who participated the screening. DMFt index 4.42 in girls, 4.78 in boys, it was found to be 4.61 in the all groups. Number of decayed teeth per person 2.6 in girls, 2.9 in boy and the number of missing primary tooth per person, It was found to be 1.5. According to the WHO dmft index should be 1.5 in school children but dmft index was found higher in participants. Early childhood is the best time to acquire the habits regarding oral and dental health.

Biography

Lütfi Saltuk Demir has been Graduated from Faculty of Medicine in Selcuk University, as Medical Doctor, with the specialties including Internal Medicine, Social and Community Medicine and Public Health. Later on he obtained his post-graduation from University of Selcuk Faculty of Medicine with subjects Public Health and then started working at The University of Konya Necmettin Erbakan Faculty of Medicine Public Health Department where she has continued his research. Presently he has been working at the at the Necmettin Erbakan Faculty of Medicine Public Health Department.

lutfi.demir@yahoo.com

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THE EVALUATION OF WORK YEAR 2015 OF AN OCCUPATIONAL HEALTH AND SAFETY UNIT OF A COMMUNITY HEALTH CENTER

Lütfi Saltuk Demir^a, Yasemin Durduran^a, Ahmet Tanrikulu^b, Mehmet Uyar^a, Muammer Kunt^a and Tahir Kemal Sahin^a^aNecmetin Erbakan University, Turkey^bDirectorate of Public Health: Selcuklu, Turkey

Occupational health and safety units (İSGB) which were established as subordinate units of community health centers has started to provide services by the "Occupational Health and Safety Services Regulation" that published in the official gazette in 2012. Not much research has been made about the provided services during the intervening period. In this study, we aimed to evaluate the works of Konya/Karatay Community Health Center Occupational Health and Safety Unit in 2015. 3 occupational physicians,

2 occupational safety professionals and 2 other medical staff as a total 7 people were employed at this Occupational Health and Safety Unit. The unit has signed contracts with 3 workplaces. The 100% of workplaces were public institutions. One of the workplaces was least dangerous, one of them was dangerous and one of them was very dangerous. There were 329 employees at workplaces, 31.3% of them were employed at very dangerous workplace and 49.5% of them were employed at dangerous workplace. At this Occupational Health and Safety Unit, 771 recruitment reports were given for least dangerous jobs in 2015. Occupational health and safety training was given to 986 people at different workplaces by the unit. All the workplaces that signed contract with Occupational Health and Safety Unit were public institutions and most of these workplaces were in danger and very dangerous class. The evaluation of the works of Occupational Health and Safety Unit and sharing of works that have been done, may support both the self-assessments of units and the works of other units.

Biography

Yasemin Durduran has been Graduated from Faculty of Medicine in Selcuk University, as Medical Doctor, with the specialties including Internal Medicine, Social and Community Medicine and Public Health. Later on she obtained his post-graduation from University of Selcuk Faculty of Medicine with subjects Public Health and then started working at The University of Konya Necmettin Erbakan Faculty of Medicine Public Health Department where she has continued his research. Presently she is working at the at the Necmettin Erbakan Faculty of Medicine Public Health Department.

yurduran@gmail.com

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REPRODUCTIVE HEALTH AND VIEWS REGARDING MARRIAGE AND FAMILY LIFE OF INTERNS IN A MEDICAL FACULTY

Mehmet Uyar^a, Elif Nur Yildirim^a and Tahir Kemal Sahin^a^aNecmettin Erbakan University, Turkey

Turkey is one of the countries in which sexuality and sexual health means marriage and family life. This work's aim is to evaluate university students' sexual health and remarks regarding marriage and family life. This descriptive study was carried out on final year students in the Medical Faculty, between 1st July 2015 and 30th June 2016. 205 of 233 students were accepted to participate in the study. Students' average of age was $18-24 \pm 1.35$ of these 43.9% were female, 86.8% were single. 79.5% of participants stated that they had no sexual experience before. 67.3% were thinking of marrying within 5 years. 39% of participants gave the definition of marriage as "sharing the life". 83.4% wanted a working spouse, 52.2% stated 25-29 ages as most appropriate ages for female to marry. 32% of participants had a boy/girlfriend. 76.6% of participants having boy/girlfriend was thinking of marrying to their partner. 77.6% of participants stated that they want to marry whom they themselves became acquainted and get on well with. 84.1% of students remarked that "I first make my decision on marriage and then get my family's approval". In study, 18 participants were considering that religious marriage ceremony is enough only for marriage. 63% stated that "I do not want to live with my spouse's family". 1/3 participants indicated "being respectful and warm-heartedness" as the characteristics that they want their partner to have most. "Disloyalty" was at the top as most unacceptable characteristic in a partner. Most interns want to marry, start a family and have children at early ages. Most interns do not have sexual experience.

Biography

Mehmet Uyar has been Graduated from Faculty of Medicine in Anadolu University, as Medical Doctor, with the specialties including Internal Medicine, Social and Community Medicine and Public Health. Later on he obtained his post-graduation from University of Selcuk Faculty of Medicine with subjects Public Health and then started working at The University of Konya Necmettin Erbakan Faculty of Medicine Public Health Department where she has continued his research. Presently he has been working at the Necmettin Erbakan Faculty of Medicine Public Health Department.

mehmetuyardr@hotmail.com

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DOMESTIC VIOLENCE AGAINST WOMEN: SECTIONAL STUDY IN KONYA

Ismail Hakkın Tuncez^a, Mehmet Uyar^a, Tahir Kemal Sahin^a, Lütfi Saltuk Demir^a and Yasemin Durduran^a^aNecmettin Erbakan University, Turkey

Violence against women is a human right violation affecting women all over the world and is a public health problem. The aim of this study; to investigate the prevalence of domestic violence against women over the age of 18 in Konya-Meram. Prepared questionnaire was administered to 261 women who applying to randomly select 9 family health centers from Konya-Meram between 1 April-29 May 2015. The average age of the women in the study, 35.4 ± 11.2 is, 66.7% were married, 19.2% smoking, 8.4% were using alcohol. Participants women's 3/4 was noted that the total income of families in the middle level. The mean age spouses of participants was 42.1 ± 10.2 . 39.3% of the spouse were university graduates. The incidence of physical violence in women participating in the survey 43.3%. In participating in the survey incidence of psychological violence is 27.6%. While incidence of economic violence 23.8%, the incidence of sexual violence 5%, exposure to any type of violence 51%, all types of violence exposure found 3.4%. Most people who apply violence was spouses with 46.3% rate. Women whose use spouse alcohol ($p = 0.001$), spouses who have been exposed to violence in childhood ($p < 0.001$), also smoking ($p < 0.001$) and alcohol ($p = 0.014$) using and his relationship with his wife badly identifies ($p = 0.014$) all types of violence were more significant. 1 out of every 2 women in the study were found to be exposed to any type of violence. People exposed to violence are applied more violence. This situation creates a vicious circle.

Biography

Tahir Kemal Şahin has been Graduated from Faculty of Medicine in Istanbul University, as Medical Doctor, with the specialties including Internal Medicine, Social and Community Medicine and Public Health. Later on he obtained his post-graduation from University of Selcuk Faculty of Medicine with subjects Public Health and then started working at The University of Konya Necmettin Erbakan Faculty of Medicine Public Health Department where she has continued his research. Presently he has been working at the Necmettin Erbakan Faculty of Medicine Public Health Department.

tasahin@hotmail.com

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PERCEIVED HIV-RELATED STIGMA IN UNIVERSITY AND HOME COMMUNITY ENVIRONMENTS: EVIDENCE FROM SOUTH AFRICAN UNIVERSITY STUDENTS AND IMPLICATIONS FOR SCALING UP HIV TESTING

Firoza Haffejee^a, Brendan Maughan-Brown^b, Thulasizwe Buthelezi^a and Ayesha BM Kharsany^c^aDurban University of Technology, South Africa^bUniversity of Cape Town, South Africa^cUniversity of KwaZulu-Natal, South Africa

Perceived stigma has a negative impact across the HIV care cascade. Our understanding about how perceived stigma varies from one environment to another is limited. This study fills an important gap in the literature by assessing how perceived stigma within the home community environment differs from that in the tertiary education environment. We used a self-administered questionnaire to obtain data (n=378) on stigmatising attitudes and perceived stigma from students attending a tertiary education institution in South Africa. Differences in perceived stigma in the university environment compared to the home community environment were assessed. Levels of reported stigmatising attitudes and discrimination were low among students. Gender differences were observed with a significantly larger proportion of males (12%) reporting stigmatising attitudes compared to females (1%, $p < 0.001$). Many students reported perceived stigma in both settings (university: 41%; community: 47%; $p = 0.09$). Among those who reported stigma, the majority perceived it in both the university and community settings. Correlation analysis indicated a positive relationship between the perceived stigma scores from each environment (0.62), with a stronger relationship found among males (0.72). Our results lead to the hypothesis that individual project perceived stigma from one environment to another. This implies that the negative public health impact of perceived stigma could extend beyond the context in which those perceptions develop. Overall, our results stress the importance of efforts to reduce perceived stigma. Such efforts could play an important role in improving the relatively poor rates of HIV testing uptake among younger populations.

Biography

Firoza Haffejee completed her PhD in 2013 at the University of KwaZulu-Natal. She is currently a senior lecturer in Physiology and Epidemiology at the Durban University of Technology in South Africa. She runs community engagement projects in Kenneth Gardens, a low socio-economic environment in the city of Durban, where she has also worked on research projects in collaboration with members of Virginia Commonwealth University. Her research is currently funded by the National Research Foundation (South Africa).

firozah@dut.ac.za

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NEUROTOXICITY OF SOLVENTS IN PATHOLOGY HOSPITAL LABORATORIES OF ORAN, ALGERIA

Medjane R^{a,b,c}, Benzian W^{a,b,c}, Ghezini Y.^{a,b}, Hadj Atou F.Z^b and Rezk-Kallah B^{a,b,c}^aFaculty of medicine of Oran, Oran, Algeria^bOccupational health department, Oran university hospital (EHUO), Oran, Algeria^cResearch Laboratory Health and Environment, Oran University, Oran, Algeria

The solvents used in pathology services expose the hospital staff to a neurotoxic risk. Through literature, few studies have explored the neurological and neurotoxicity in the hospital staff laboratories after exposure to a mixture of solvents such as formaldehyde, acetone. Research and evaluate in a population occupationally exposed to a mixture of solvents in pathology hospital laboratories the existence of neurotoxic disorders subclinical. It is a transversal epidemiological study aiming to describe, and which is of an exposed-unexposed type conducted among 39 persons exposed to a mixture of solvents and 95 controls belonging to the same hospital, matched on sex and age. All were interrogated by the questionnaire. In addition, we performed their neurobehavioral tests (NBT) and explorations of neuromotor functions (CATSYS 2000). The estimation of occupational exposure has been assessed based on the weekly consumption of each manipulated solvent. Sociodemographic parameters are comparable to the exposed and unexposed. The exposed persons are, on average aged of 36, they have a length of exposure to solvents of 11,8 years, and manipulate on average six liters of solvent per week. Concerning the suction hood, have been found out that it is used among 74.5%, and they all wear gloves not adapted to the use of solvents. The exposed population relates significantly more neurotoxic symptoms (asthenia, irritability, headaches, and concentration) than witnesses. The exposed population is significantly less efficient; Pegboard (40.04 versus 36.70), Finger Tapping (45.54 versus 56.08), are slower (283 ms versus 252 ms) and have significantly more postural disorders.

Biography

Rabia Medjane has completed her Master in Occupational Medicine at University Hospital and graduation from the Faculty of Medicine of Oran (Algeria). She is currently working as Hospital Assistant at The University Hospital of Oran, Algeria.

medjane31@gmail.com

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THE SHIFT WORK: IT'S IMPACT ON HEALTH AND ON QUALITY OF LIFE AND SLEEP FOR NURSE OF HOSPITAL OF ORAN (ALGERIA)

Medjane R^{a,b,c}, Ghezini Y^{a,b}, Benzian W^{a,b,c}, Guessab W^b and Rezk-Kallah B^{a,b,c}^aFaculty of Medicine of Oran, Oran, Algeria^bOccupational Health Department, Oran University Hospital (EHUO), Algeria^cResearch Laboratory Health and Environment, Oran University, Algeria

Shift work has grown considerably in the world, it helps to ensure continuity of production or services where its imposition is particularly by the public sector such as hospitals. This study explores sleep and vigilance disorders and related health status of the shift work, evaluates health condition and experiences of workers on shift work and study the possible relationship between shift work and some personal and professional factors. It is a transversal epidemiological study aiming to describe, and which is of an exposed-unexposed type conducted by questionnaire among nursing hospital. The study population includes 637 nurses: 52% work day shift, 31% in shift schedule and 17% in night schedule. Their mean age was comparable in the three groups with a male predominance (87%). Their average length was 14 ± 11 years. The majority of workers are satisfied with their job (68%). sleepiness problems (Epworth >8) concerning for more night workers. Spiegel shows for the last night that 42% of night workers have sleeping troubles (score <18). Obesity and overweight are more noticeable. Mood disorders and taking sleeping pills or anti-anxiety drugs are encountered among night workers, on the other side hypertension, dyslipidemia and diabetes are more encountered in shift workers. For shift workers, the main motivation for this type of work is the salary (65). More of shift worker on two states have increased their consumption of tobacco, coffee. It is for the occupational physician to aware and informs workers and employees of the impact of this type of work.

Biography

Rabia Medjane has completed her Master in Occupational Medicine at University Hospital and graduation from the Faculty of Medicine of Oran (Algeria). She is currently working as Hospital Assistant at The University Hospital of Oran, Algeria.

medjane31@gmail.com

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ASSESSMENT OF SOIL ORGANIC CARBON STOCK IN SEA GRASS BEDS OF GAZI BAY, KENYA

Okoth Reagan^a and Githaiga N. Michael^b^aSchool of pure and Applied Science Kenyatta University, Kenya^bKenya Marine and Fisheries Research Institute, Kenya

Seagrasses are marine angiosperms inhabiting coastal areas from the intertidal zone to several tens of meters deep in all the continents except Antarctica showing relatively higher species diversity in the tropical regions than temperate. They provide important ecosystem goods and services like sediment stabilization, provide habitat for marine organisms and have also been recognized for their capacity to sequester and store carbon in the sediment for a long time through the accumulation of autochthonous and the allochthonous carbon. This study determines the organic carbon stock in the four dominant seagrass species (*Thalassodendron ciliatum*, *Syringodium isoetifolium*, *Enhalus acoroides* and *Thalassia hemprichii*) of Gazi Bay. Coring extending to 1m deep was done within quadrats of 0.5m by 0.5m using a Russian peat sampling corer. The cores were sliced into 5cm interval and taken to the laboratory for wet-dry weight conversion. Sub-samples of 5g were analysed for organic matter (LOI). General equations for the relationship between %LOI and %C_{org} in seagrass ($\%C_{org} = 0.43*\%LOI - 0.33$) $r^2 = 0.96$ for seagrass soils with %LOI >0.2 and ($C_{org} = -0.21 + 0.40*\%LOI$) $r^2 = 0.87$ in seagrass soils with %LOI <0.2 were used to calculate the Corg stock in each species. The study tested the differences in % organic matter for vegetated and unvegetated sites, and the carbon stock among species using single factor analysis of variance (ANOVA). In *T. hemprichii*, the % organic matter was significantly different between the seagrass vegetated and the un-vegetated areas ($F_{(1, 180)} = 13.54$; $p = 0.002$) but not with depth in both the seagrass vegetated and un-vegetated areas ($F_{(9, 180)} = 0.85$; $p = 0.567$). In *T. ciliatum*, the % organic matter was highly significantly different between the seagrass vegetated and the un-vegetated areas ($F_{(1, 180)} = 123.84$, $p < 0.001$) but was not statistically significantly different with depth between the seagrass vegetated and unvegetated areas ($F_{(9, 180)} = 0.60$; $p = 0.794$). In *E. acoroides*, the % organic matter was highly significantly different between the seagrass vegetated and the un-vegetated areas ($F_{(1, 180)} = 13.54$; $p = 0.002$) but was not significantly different with depth between the seagrass vegetated and un-vegetated areas ($F_{(9, 180)} = 1.01$; $p = 0.437$). In *S. isoetifolium*, the % organic matter was highly significantly different between the seagrass vegetated and the un-vegetated areas ($F_{(1, 180)} = 179.62$; $p < 0.001$) but was not significantly different with depth between the seagrass vegetated and un-vegetated areas ($F_{(9, 180)} = 0.21$; $p = 0.983$). Sediment Corg was highly significantly different between species ($F_{(3, 56)} = 4.269$, $p = 0.005$). The results of this study shows the important role of seagrass in climate change mitigation and can therefore be used to advice current and future ecosystem conservation planning.

Biography

Okoth Reagan has completed his BSc at the age of 23 years from Kenyatta University Kenya. He is currently an Intern at Taita Taveta Research and Resource Arc under the Adaptation for Ecosystem Resilience in Africa (AFERIA) project coordinated by International Centre for Insect Physiology and ecosystem (ICIPE) a premier research organization.

reaganokoth@hotmail.com

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OCCUPATIONAL AND ENVIRONMENTAL FACTORS RISK OF BLADDER CANCER

Y.Ghezini^a, W.Benzian^{a,b}, R.Medjane^{a,b} and B.Rezk-Kallah^{a,b}^aOccupational Health Service, EHU Oran, Usto Hai Essabah, BP N° 41 66 Ibn Rochd Oran, Algeria.^bEnvironmental and Health Research Laboratory, Algeria.

Introduction: In Algeria, the bladder cancer is the second urologic cancer after the prostate. Several risk factors are implicated in particular tobacco. The aim of this study is to evaluate the environmental and occupational risk factors.

Materials and Methods: The recruitment of cases and controls was done in the urology department of a university hospital of Oran. Cases are male subjects aged over 40 years, with primary bladder cancer. Controls are recruited in the same service, but without malign tumors. Regression was used to adjust for potential confounders.

Results: This study included 159 bladder cancer cases and 224 controls. The cases and controls were comparable on most of the major sociodemographic characteristics: age, marital status, place of birth and level of education. The first symptom of bladder cancer was hematuria 87%. The tumor is the transitional cell carcinoma type with 99% and superficial in 74%. Tobacco OR = 6.83 95% CI 3.96 to 11.77 and residence OR 0.38, 95% CI 0.23-0.63 were associated with bladder cancer in contrast to toxics: pesticides, aromatic amines, polycyclic hydrocarbon aromatic, Diesel fumes, welding fumes, solvents and pesticides.

Conclusion: Tobacco is the main risk factor for bladder cancer. The association observed with the place of residence is linked to the difference in availability and access to care. We need to expand the study of a large number of cases.

Biography

Ghezini Younes has been graduated from Medical Faculty of Oran, Algeria. Ghezini is a Medical Doctor, with the specialties including occupational and environmental health and he since 2003, teaches at the same faculty where he continued his research.

younesetre@gmail.com

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AESTHETICS IN CULTURAL LANDSCAPE AND ARCHITECTURAL EDUCATION

Hacer Mutlu Danaci*

*Akdeniz University, Turkey

The environmental education has different aspects, while the aesthetical deformations particularly caused by the built-up environment are of importance. One of the primary concerns of the architectural education needs to be the aesthetic integration of the structure with the environment. Usually, architects design very nice structures, but sometimes they neglect the integration of the building they design with the cultural landscape where the building is located. In the study, the studies on setting up rules and inspection are mentioned on the level of cultural landscape by highlighting the aesthetics and measurement of aesthetic value in cultural landscape and the environmental education and description of aesthetics in architectural education.

Biography

Received her B.Arch degree from the Department of Architecture at Yıldız Technical University, İstanbul, Turkey) (1998); her M.S. (2007) and Ph.D. (2012) degrees in Landscape Architecture from Akdeniz University. Her Ph.D. thesis is titled "Analysis of Vernacular Architecture and Cultural Landscape: the Case Study of Elmali" Her academic interests include ecological architecture, environment, architectural design, cultural landscapes, vernacular architecture, visual analysis and architectural education. As a Faculty member at Akdeniz University, Department of Architecture, she gives required and elective courses related to ecological design, control of psysical environment, landscape design and residential design guided by traditional settlement patterns. She has numerous articles in scientific journals and presentations at conferences.

hacermutlu@gmail.com

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ENERGY SAFETY AND MIGRATION AS A PUBLIC HEALTH PRIORITIES AND CONDITION FOR SUSTAINABILITY

Marija Jevtić^a and Catherine Bouland^b^aUniversity of Novi Sad, Serbia^bUniversité libre de Bruxelles (ULB), Belgium

Instability and insecurity, migration, conflicts and climate change, impaired balance, environmental and economic weakness... This is a brief patient history of our Planet Earth. We are leaving for the future generations, numerous painful symptoms and severe clinical picture of our Planet Earth. Solving these problems is not only a challenge, but a condition for the survival of future generations. The aim of this study was to, among other things, examine the interest and awareness of young future health professionals about all global challenges of the environmental health. In methodology uses an open anonymous questionnaire, in which, among other things, students responded to a question about global environmental health.challenges. Preliminary results have provided an important framework for further reflections on public health priorities. While climate change, water and air occupied an important place among the priorities of future doctors, energy and migration are neglected in their answers as a priority. In conclusion, it is necessary to intensify training and strengthen curricula of health professionals on this subject. Migration is, among others, a consequence of climate change, but migration influences changes in urban areas, and furthermore requires transformations of the health systems. Energy is now necessary for health professional to express their knowledge and skills. Notwithstanding health care professionals should be aware of the importance of energy saving and efficiency, and should be encouraged to use renewable energy.

Biography

Marija Jevtic is a full professor at the University of Novi Sad, specialist in Hygiene (Public Health), subspecialisation in urban ecology. Organisation: University of Novi Sad, Medical Faculty, Institute of Public Health of Vojvodina. Marija Jevtic completed M.Sc. from University of Belgrade and Ph.D. from University of Novi Sad in the field of Environment and Health, Academic Master Degree in Health Management from University of Belgrade, Group analytic therapist (2009 -GAS Belgrade). Previously Marija Jevtic worked as Assistant minister, Director of Institute of Public Health of Vojvodina.

marija.jevtic@uns.ac.rs

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EXPOSURE PATHWAYS AND HUMAN HEALTH RISK ASSESSMENT FROM ARSENIC EXPOSURE IN BANGLADESH

Tijo Joseph^a, Brajesh K Dubey^b and Edward A McBean^a^aUniversity of Guelph, Canada^bIIT Kharagpur, India

High arsenic exposures, prevalent through dietary and non-dietary sources in Bangladesh, present a major health risk to the public. Groundwater, the most important source of water for drinking, cooking, and irrigation in Bangladesh, is a significant contributor to the daily human intake of arsenic. Other arsenic intake pathways, established as relevant for Bangladeshi adults through this study, include consumption of contaminated edible plant parts and animal-origin food, inhalation of contaminated air, soil ingestion, betel quid chewing, and tobacco smoking. A quantitative human health risk assessment is described as a result of arsenic exposure through food and water intake, tea intake, accidental soil ingestion, and chewing of betel quid, while people meet their desirable dietary intake requirements throughout their lifetime. This study qualifies and quantifies these arsenic intake pathways through analysis of the range of arsenic levels observed in different food types, water, soil, and air in Bangladesh, and highlights the contributions of dietary intake variation and cooking method in influencing arsenic exposures. In evaluating the contribution of each intake pathway to average daily arsenic intake, the results show that food and water intake combined, make up approximately 98% of the daily arsenic intake with the balance contributed to by intake pathways such as tea consumption, soil ingestion, and quid consumption. Under an exposure scenario where the arsenic concentration in water is in the WHO guideline (0.01mg/L), food intake is the major arsenic intake pathway ranging from 67% to 80% of the average daily arsenic intake. However, the contribution from food drops to a range of 29% to 45% for an exposure scenario where arsenic in water is at the Bangladesh standard (0.05mg/L). The lifetime excess risk of cancer occurrence from chronic arsenic exposure, considering a population of 160 million people, based on an exposure scenario with 85 million people on the WHO guideline value and 75 million people at the Bangladesh standard, and assuming 35 million people associated with a heavy activity level, is estimated as 1.15 million cases. This study also highlights the potential of desirable dietary patterns and intakes in increasing arsenic exposure which is relevant to Bangladesh where nutritional deficiencies and lower-than-desirable dietary intakes continue to be a major concern.

bkubey@civil.iitkgp.ernet.in

PHENOTYPIC VARIABILITY CONFIRMED BY NUCLEAR RIBOSOMAL DNA SUGGESTS A POSSIBLE NATURAL HYBRID ZONE OF TRIATOMA BRASILIENSIS SPECIES COMPLEX

Jane Costa^a^aInstituto Oswaldo Cruz, Brazil

Triatoma brasiliensis macromelasoma occurs in Pernambuco state, Brazil, which is situated between the distribution areas of *Triatoma brasiliensis brasiliensis* (north) and *Triatoma juazeirensis* (south). *T. b. macromelasoma* displays greater variations in its chromatic phenotype than either *T. b. brasiliensis* or *T. juazeirensis* and patterns reminiscent of one or the other. Experimental crosses from each of these members of the *T. brasiliensis* species complex generated fertile offspring suggesting that viable hybrids could be present in nature, despite their significant genetic distances. Considering the geographical position of occurrence of the *T. b. macromelasoma* (in Pernambuco) it was proposed to be an area capable of supporting natural hybridization between *T. b. brasiliensis* and *T. juazeirensis*. Since phenotypic variability is expected, this study investigated the existence of intermediate chromatic phenotypes for *T. b. macromelasoma* in various locations in areas between the *T. b. brasiliensis* and *T. juazeirensis* occurrences. Thirteen different color patterns were for the first time characterized and nine of those displayed intermediate phenotypes. Molecular analysis performed using ribosomal DNA intergenic region, grouped all within the *T. brasiliensis* complex. The intermediate chromatic phenotypes, molecular analysis and experimental crosses all support the distinction of a zone of hybridization that gave rise to the *T. b. macromelasoma* through homoploid evolution.

janecostabio@gmail.com

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BAYESIAN SPATIO-TEMPORAL PREDICTION OF CANCER DYNAMICS

*IULIAN TEODOR, VLAD,

*University "JAUME I" Av. SOS BAYNAT, s/n Campus RIU SEC, E-12071 Castellón, SPAIN

The article "Bayesian Spatio-Temporal prediction of cancer dynamics", published in Computers and Mathematics with Applications, is one of the prediction methods implemented in PreDySEC software. Using a prediction method and comparison with the real evolution (from analysis) a physician can observe if the prescribed treatment has the desired effect. The development of tumor models is important as they offer a way to better understand the kinetic growth of malignant tumors which may lead to the development of successful treatment strategies. My PhD research theme was to observe the dynamic of cancer tumors and to develop and implement new methods and algorithms for prediction of tumour growth. In this sense, I developed three methods of prediction and I plan to develop a new logical algorithm to predict the growing tumors in time and space. All these methods were implementing in PreDySEC (Prediction of Dynamic Shape Evolution of Cancer) software - a Matlab interface of mathematical algorithms. The mathematical methods and the research result of prediction are published in the following articles:

- Bayesian Spatio-Temporal prediction of cancer dynamics
- Two handy geometric prediction methods of cancer growth
- A geometric approach to cancer growth prediction based on Cox processes

I plan to develop the PreDySEC and offer an online platform for this software with friendly and easy-to-use graphical interface.

vlad@uji.es

STATE OF SANITATION AND HYGIENE OF PUBLIC PRIMARY SCHOOLS IN KAKAMEGA MUNICIPALITY, WESTERN KENYA

Faiza Mwatumu Barasa

*Moi University, Kenya

This study assessed the state of sanitation and hygiene in public primary schools in Kakamega Municipality Division. All 25 public primary schools located in Kakamega Municipality Division participated. The descriptive cross-sectional study design was used. Stratified random sampling was used to select 400 pupils between class 4 and 7. Twenty-five (25) teachers were purposively sampled. Study tools used were an observational checklist and structured questionnaires. Data analysis was performed using SPSS version 21. Descriptive statistics including mean and cross tabulations were used. Pearson's Chi-Square test was used to determine relationships between the variables. Approval by Institutional Research and Ethics Committee of the Moi University and informed consent from all study participants was sought. The results indicated that the state of sanitary facilities in schools was poor, unmaintained and inadequate in almost 50% of schools. This demonstrated that investment in school infrastructure was not accorded due priority. Negative effects on pupil's health were due to inaccessible safe drinking water and inadequate sanitary infrastructure despite pupils demonstrating acceptable levels of knowledge on personal hygiene and sanitation. As a result, pupils suffered from communicable diseases such as diarrhea, flu, and typhoid which could be prevented by improving sanitation in schools. The study concluded that physical infrastructure in schools within the study area was in a deplorable state and inadequate for the pupil population. Gaps were identified in school management of resources and enforcement of school health laws.

mwafazz@yahoo.com/faizabarasa@gmail.com

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STUDY OF OCCUPATIONAL ACCIDENTS RESULTING FROM CONSTRUCTION ACTIVITIES REFERRED TO YAZD DEPARTMENT OF SOCIAL AFFAIRS (2011-2014)

Mohammad Reza Ahadiat*

*Islamic Azad University, Iran

Accidents resulting from construction activities as one of the main reasons causing disability or death in the developing and developed countries has been and identify the factors that are involved in creating the events of the main measures to control and reduce the risk is considered. In this study, all workers were employed in construction jobs during the years 2011 to 2014 employment accident and managing events in Yazd labor and Social Affairs has been recorded in the study have been recorded with the Check list of required information and data were then analyzed. Mean age of 34 years of study, the majority of subjects were male, and lower education levels than victims of associate degrees, Most time the incident was 13-7, the most injured part of the hands and feet, the most important event foul in or between objects and machines and building more factories owned (private) and cause lack of control the employer has happened. Using the correct and efficient programs, health education and greater emphasis on compliance with existing regulations could be more professional construction accidents could be prevented.

m.ahadiat@srbiau.ac.ir

AMOXICILLIN ADSORPTION ON MICROWAVE PREPARED ACTIVATED CARBON FROM ARUNDO DONAX LINN: ISOTHERMS, KINETICS, AND THERMODYNAMICS STUDIES

Muthanna J. Ahmed^{a,b}^aUniversity of Baghdad, Iraq^bUniversiti Kebangsaan Malaysia, Malaysia

Microwave- assisted KOH activation of renewable biomass *Arundo donax* Linn was adopted for preparation of activated carbon (KAC) with high capacity for amoxicillin antibiotic (AMX). The characteristics of KAC were examined by proximate and pore structure analyses, scanning electron microscopy (SEM) and Fourier transforms infrared spectroscopy (FTIR). The ash and moisture contents of KAC were 5.5 and 0.5 % compared to 2.2 and 2.1 % for raw biomass. The BET surface area and total pore volume were identified to be 1065.3 m²/g and 0.643 cm³/g, respectively. The best preparation conditions in terms of KAC yield and AMX uptake were reported as 10 min radiation time, 620 W radiation power and 2 g/g impregnation ratio resulted in 9.1 % yield and 196.9 mg/g AMX uptake. Experimental equilibrium data for AMX adsorption were analyzed by Langmuir, Freundlich, and Sips isotherms. The results showed that the best fitting was achieved by Sips isotherm with high adsorption capacity of 345.4 mg/g on KAC compared to 75.8 mg/g on precursor. Also, kinetic data were correlated by pseudo-first order, pseudo-second order, and intraparticle diffusion models with well-fitting to pseudo-second order model. Thermodynamic analysis showed that adsorption enthalpy of AMX was 17.7 kJ/mol which revealed endothermic and physisorptive nature under examined conditions.

muthanna.ja@gmail.com

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ASSESSMENT OF KNOWLEDGE OF TRANSMISSION OF SCHISTOSOMIASIS AND ASSOCIATED FACTORS AMONG THE PEOPLE OF MWALUPHAMBA LOCATION , KWALE COUNTY-KENYA

Ahmad Juma^a, Ng'etich Saitabau Kipkemoi Arthur^a, Violet Naanyu^a and Ann Mwangi^a^aMoi University, Kenya

The study aimed at assessing the level of knowledge of transmission of schistosomiasis and the other associated factors amongst community members in Mwaluphamba Location of Kwale County. A cross-sectional study design was adopted. Data was collected using a structured questionnaire. Results showed that a majority of the community members (98%) knew about schistosomiasis but did not know the mode of infection as only 29% knew how the parasite was transmitted to the human body. A majority (96%) of the respondents also knew of the signs and symptoms of schistosomiasis. A small proportion (10%) of the respondents had access to safe water for domestic use. Most (63%) schistosomiasis infections occurred during the wet season and a majority (69%) of the community members reported contact with domestic water activities more than four times a week. In conclusion, the level of knowledge on transmission of schistosomiasis was quite low and there was a significant association between the environmental factors and transmission of urinary schistosomiasis. There is need to mobilize and educate the community on the modes of transmission of schistosomiasis infection and concerned stakeholders should come up with strategies for ensuring that the community uses safe water for domestic use.

arthursaitabau@yahoo.com

STATE OF THE FIELD: PAY FOR SUCCESS TO IMPROVE ASTHMA OUTCOMES IN THE UNITED STATES

Ruth Ann Norton^a, Kevin Chan^a and Brendan Brown^a^aGreen & Healthy Homes Initiative, USA

Impact investment is an increasingly popular global trend in which socially-minded investors look to fund businesses and project that not only have the potential for financial return, but also producing societal benefits as well. In the United States, environmental health is a field that has seen limited investment from the private sector, but recent project developments look to change this status quo. Jurisdictions across the country are studying the potential application of Pay for Success (also known as Social Impact Bonds) as a financing mechanism to fund environmental health interventions which result in improved health outcomes for persons with severe asthma. Asthma is the most common chronic health condition for children in the United States, often prevalent in low-income communities with poor housing quality. It is linked to staggering healthcare costs and other related societal burden-- the estimated total incremental cost of asthma in the United States was USD 56 billion in 2007 . The United States healthcare system currently does not provide funding to address the environmental triggers of asthma, and this gap provides an opportunity for Pay for Success to bridge private investment dollars to preventative environmental health services. This paper provides insight into the progress that local communities are making in the development of Pay for Success projects across the country. While each project is unique based on local contexts, there are some shared themes that may inform the further development of these types of projects in the United States and abroad.

ranorton@ghhi.org

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BIOMARKERS OF CARDIOMYOCYTE INJURY AND STRESS IDENTIFY LEFT ATRIAL AND LEFT VENTRICULAR REMODELING AND DYSFUNCTION: A POPULATION-BASED STUDY

Susana Ravassa Albéniz*

*University of Navarra, Spain

Background/Objectives: The validation of effective screening tools for the identification of patients with subclinical myocardial remodeling is a major clinical need. Thus, we explored the associations of circulating biomarkers of cardiomyocyte injury and stress with subclinical cardiac remodeling and dysfunction, and with biomarkers reflecting collagen turnover.

Methods: We randomly recruited 727 subjects from a general population (51.2% women; mean age 51.3 years). Measurements included echocardiographic left atrial (LA) and left ventricular (LV) structure and function, quantification of high sensitivity cardiac Troponin T (hs-cTnT), NT-proBNP, and biomarkers of collagen type I and III turnover.

Results: In unadjusted and adjusted analyses, the prevalence of LA enlargement (LAE), LV hypertrophy (LVH) and LV diastolic dysfunction (LVDD) increased with higher hs-cTnT ($P \leq 0.031$). NT-proBNP was independently associated with LVDD ($P = 0.009$). Both biomarkers combined yielded significant integrated discrimination and net reclassification improvements ($P \leq 0.014$ and $P \leq 0.009$, respectively) for LAE, LVH and LVDD, over the conventional risk factors, and were independently and positively associated with biomarkers of collagen type I turnover. In a sensitivity analysis, after excluding participants with previous cardiac diseases, our findings remained consistent.

Conclusions: Our population-based study suggested that subclinical LV and LA remodeling were associated with hs-cTnT, and that, in combination with NT-proBNP, hs-cTnT showed incremental diagnostic utility over the conventional risk factors. Both biomarkers were associated with biomarkers of collagen type 1 turnover. Thus, biomarkers of cardiomyocyte microinjury and hemodynamic stress may stimulate fibrosis-related mechanisms and facilitate the diagnosis of subclinical LA and LV remodelling and dysfunction in the general population.

sravassa@unav.es

FACTOR INFLUENCING SPUTUM SMEAR CONVERSION AT THE END OF TWO MONTHS OF TUBERCULOSIS TREATMENT AMONG NEW SMEAR POSITIVE PULMONARY TUBERCULOSIS PATIENTS IN ADDIS ABABA, ETHIOPIA

Zerihun Yaregal*

*Gondar University, Ethiopia

Limited data are available on factors associated with persistent sputum smear positivity at the end of second months of anti-TB treatment in Ethiopia. The present investigation was undertaken to identify factors influencing sputum smear conversion at the end of second months of anti-TB among new smear positive pulmonary tuberculosis patients registered in a directly observed treatment – short course (DOTS) programme in Addis Ababa, Ethiopia. Case-control study was performed in Addis Ababa public health centers from December 6/2012-January 30/2013. Cases were 78 sputum smear positive TB patients who started anti-TB from the period of February 9 to October 10/2012, with a positive sputum smear at the end of second months of anti-TB, randomly selected from the prepared sampling frame. Two controls were recruited for each case from the same health facility and nearest the date of diagnosis in each case with negative sputum smear at the end of second months of anti-TB treatment. Data were collected using a pre-tested questionnaire by trained data collectors. Data was entered using EPI-Info version 3.5.1 and analyzed using SPSS version 20. Odds Ratio & 95% Confidence Interval (CI) used to measure the associations.

zeruhewan@gmail.com