

DAY 1

Scientific Tracks & Abstracts



4th Edition of International Conference on

Occupational Health and Safety

May 28-29, 2018 | London, UK

DAY 1
May 28, 2018

Sessions

Occupational Mental Health | Occupational Health and Diseases | Occupational Health and Sport Medicine | Occupational Health Toxicology

Session Chair

Anna Tompa

Semmelweis University, Hungary

Session Chair

Frederic Dutheil

University Clermont Auvergne Clermont-Ferrand, France

Session Introduction

Title: Parity in approach to Mental Health and Physical Health in the Workplace – is all equal in the development of Healthy Workplaces?

Gabrielle McHugh, The Next Step Consulting, Canada

Title: Latent tuberculosis infection in German healthcare workers

Albert Nienhaus, University Hospital Hamburg-Eppendorf, Germany

Title: Where Occupational Medicine Goes?

Hrvoje Lalic, University of Rijeka, Croatia

Title: Interplay of the pulmonary phagocytosis response to, and the in vivo solubilization of amorphous silica nanoparticles deposited in lungs of rats under long-term inhalation exposures as determinants of their modest fibrogenicity and low systemic toxicity

Solovyeva Svetlana Nikolaevna, Ekaterinburg Medical Research Center, Russia

Title: Addressing Mental Health Problems of Ready Made Garment Workers

Farhtheeba Rahat Khan, Working with Women SNV, Bangladesh

Title: Circadian rhythm change and shift work sleep disorder in Korean fire fighters

Tae-Won Jang, University Guri Hospital, South Korea

May 28-29, 2018
London, UKGabrielle McHugh, J Nurs Health Stud 2018, Volume 3
DOI: 10.21767/2574-2825-C2-005

PARITY IN APPROACH TO MENTAL HEALTH AND PHYSICAL HEALTH IN THE WORKPLACE – IS ALL EQUAL IN THE DEVELOPMENT OF HEALTHY WORKPLACES?

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Canadian workers' compensation tribunal has set substantive legal precedents for parity in approach to psychological and physical injury placing a duty on employers to ensure psychological and physical safety in the workplace. Consequently, the National Standard for Psychological Health and Safety in the Workplace (2013) advocates for healthy workplaces through prevention, protection and promotion strategies. While not a new concept, development towards a healthy workplace spotlights again the expanding domain of occupational health to protect workers against injury from physical and psychological hazards. Hence, my research focuses on ways in which organizational culture, social climate and leadership style may influence the development of healthy workplaces. My findings clearly show a relationship between the various variables explored, leading to my revised model for the healthy workplace that clearly points to the separation of the distal environment (culture and leadership) from the proximal environment (climate, occupational bond, health practice) and indicates that the proximal environment variables have a greater influence over workers' perceptions than the distal working environment. This structural revision has important implications for both theory and practice. There

is some concrete evidence here suggesting that a top down approach is not necessarily the best way to implement change and support a healthy workplace. The findings are consistent with current research indicating that co-workers are more directly affecting behavior than supervisors or managers. In order to advance the healthy workplace management needs to pay particular attention to proximal influences. Author looks forward to discuss further the practical implications of this research.

Biography

Gabrielle McHugh completed her BA in Psychology from National University of Ireland in 1988; MA in Disability Management from University of Northern British Columbia in 2005 and PhD at the same university in 2012. Her PhD research focused on the ways in which organizational culture, social climate and leadership style influence the healthy workplace. She completed a four-year research fellowship at Bournemouth University, UK, before returning to Canada as an independent Social Scientist whose research in the area of healthy workplaces is endorsed by Excellence Canada. She is also affiliated with Webster University.

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London, UKAlbert Nienhaus et al., J Nurs Health Stud 2018, Volume 3
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LATENT TUBERCULOSIS INFECTION IN GERMAN HEALTHCARE WORKERS

Albert Nienhaus and **Anja Schablon**

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Introduction: Healthcare workers (HCWs) in Germany - a low incidence country - with contact to patients with tuberculosis (TB) are considered a high-risk group for latent TB infection (LTBI) and therefore are screened for TB. The German Occupational TB Network data is analyzed in order to estimate the prevalence of LTBI and to evaluate risk factors for LTBI.

Methods: The TB Network comprises 5,474 HCWs who were screened for LTBI with an Interferon Gamma Release Assay (IGRA). HCWs with a positive IGRA result were x rayed in order to exclude active TB. Risk factors for LTBI were assessed by a standardized questionnaire. Adjusted odds ratios (OR) were calculated by logistic regression using SPSS. In addition a head-to-head comparison of the Quantiferon Gold in tube and the Quantiferon Plus was performed in 134 students from high TB burden countries. In either of the two IGRA positive were 9.8%. Discordant results were observed in three participants with results very close to the cut-off. Agreement between the two IGRA was high ($k=0.85$).

Results: IGRA was positive in 393 HCWs (7.2%). Prevalence of LTBI increased with age. (OR for age >55 years 4.8; 95% CI 2.8-7.0), TB in history (OR 6.9; 95% CI 3.7-13.5), migration from a high incidence country (OR 2.2; 95% CI 1.7-2.8) and working on an infection ward (OR 1.9; 95% CI 1.1-3.3) or in geriatric care (OR 1.7; 95% CI 1.0-2.9). No active TB was diagnosed.

Conclusion: Even though screening was performed in HCWs with contact to TB patients only, work related risk factors for LTBI were identified. The new version of the Quantiferon agrees well with the earlier version.

Biography

He was the Research Associate of the Professional Association for health service and welfare (BGW). Since 2010 he is Professor at the University Medical Center Hamburg Eppendorf (UKE). He is also Specialist in occupational medicine, epidemiologist.

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London, UKHrvoje Lalić, J Nurs Health Stud 2018, Volume 3
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WHERE OCCUPATIONAL MEDICINE GOES?

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Occupational medicine, occupational and environmental medicine, industrial hygiene, occupational and sports medicine, protection at work, whatever it is called in different countries, this is an extraordinary important branch of preventive medicine. In some European countries, occupational medicine as a studying scientific discipline has lost its recognition, starting from health centres up to medical schools. The question to be asked is whether such an automatic negation of a new danger is positive, not only for the reason of the lost dignity, but also because of endangering community and environment. We have witnessed for a prolonged period of time the results of weakening of the occupational medicine. The traffic accidents and miss use of firearms have increased, as well as sudden deaths of young athletes at sports events, the number of work injuries and professional illness. Further question is the growing privatization and tendency of the total privatization of primary and specific healthcare, i.e. the whole health system except partially hospitals. The occupational medicine specialist at the open market losses the required neutrality and in order to keep the clients and survive, panders to contracted firms or to the workers. Furthermore, psychologists and psychiatrists that make a compulsory part of the occupational medicine teams, do inadequate work capacity assessments by overlooking specificity of the workplace. It is necessary to return dignity and independency to occupational medicine, so it can achieve its primary task without any type

of pressure - assessing work capacity. Trends of the modern occupational health services, visiting of working places, questioning and screenings have to be conducted but at the strong stationary occupational medicine centres, preferably at scientific educational institutions.

Biography

Hrvoje Lalic was born in Rijeka, Croatia in 1960. Medical school University Rijeka finished in 1983 and worked as general practitioner in the Health Center Rijeka for ten years. Specialization in Occupational Medicine has done partially in Zagreb, Croatian capital city, in internationally famous School "Andrija Štampar" that is under WHO patronage and partially in Bologna, Italy at "Policlinic S'Orsola Malpighi, OM school for specialization. Scientific and educational career he built parallel with his practical work in OM surgery. He participated World Congresses, OM Congress in Moscow – plenary lecture, San Marino Italy, Dubrovnik and Hvar in Croatia etc. Invited lecturer at Trieste, Italy – 10 hours of lectures to medical students, doctors and professors and active participant in Erasmus Program, speaker – 10 hours of lectures in Umeå, Sweden, 10 hours in Bologna, Italy, this year (2017) in University of Vienna – 10 hours of lectures. First author of papers published and cited in international journals, tracked in Pub Med Medline, CC, SCI and Open Access.

Now is working at the Dpt of OM Medicine Rijeka like a specialist of OM and Sports medicine and regular professor of OM at Medical School University of Rijeka, Croatia.

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London, UKSvetlana N Solovyeva et al., J Nurs Health Stud 2018, Volume 3
DOI: 10.21767/2574-2825-C2-005**INTERPLAY OF THE PULMONARY PHAGOCYTOSIS RESPONSE TO, AND THE IN VIVO SOLUBILIZATION OF AMORPHOUS SILICA NANOPARTICLES DEPOSITED IN LUNGS OF RATS UNDER LONG-TERM INHALATION EXPOSURES AS DETERMINANTS OF THEIR MODEST FIBROGENICITY AND LOW SYSTEMIC TOXICITY****Svetlana N Solovyeva, Marina P Sutunkova, Boris A Katsnelson, Vladimir B Gurvich, Larisa I Privalova, Ilzira A Minigalieva, Tatyana V Slyshkina, Irene E Valamina, Oleg H Makeyev, Vladimir Ya Shur, Ilya V Zubarev, Dmitry K Kuznetsov**and **Ekaterina V Shishkina**

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The silica (mostly amorphous) containing submicron spherical particles with a prevailing proportion of those in the upper nanoscale range (mean diameter 90 ± 30 nm) induces, when instilled intratracheally into rat's low airways, a typical phagocytic cells' response comparable with that to very cytotoxic and fibrogenic standard quartz powder DQ12. However, under a long-term (up to six months, five times a week, four h per day) inhalation nose-only exposure at realistic concentrations (2.6 ± 0.6 or 10.6 ± 2.1 mg/m³) rats developed but a quite negligible pulmonary silicosis along with very low systemic toxicity. Such unusual discrepancy between acute and chronic adverse effects of particulates could be explained by the demonstrated low SiO₂ retention in lungs and other organs most probably due to a relatively high solubility of these nanoparticles in relevant biological and model milieus. The multi-compartmental mechanistic model (figure 1) which had been previously found adequate for imitating pulmonary retention of different particles could be satisfactorily adjusted to the present experimental results (figure 2) only when operating with constants describing both the dissolution and cell-mediated controlling mechanisms. The unexpectedly mild adverse effects notwithstanding, the harmfulness of the studied industrial aerosol deserves a cautious assessment as

a health risk factor because of its genotoxicity and trans-nasal penetration of nanoparticles into the olfactory brain found by us in the same inhalation experiment.

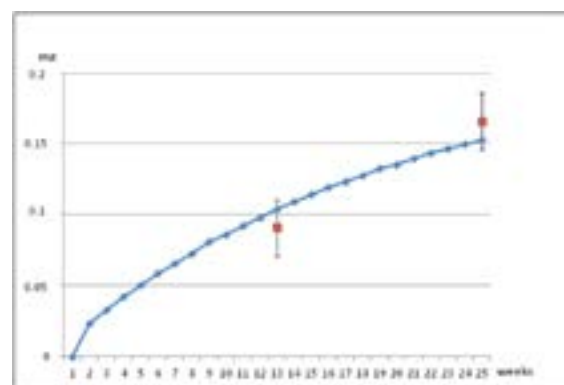


Figure 2. Silica content of rat lungs exposed compartmental model for the kinetics of to 2.5 mgm³ aerosol concentration

Biography

Solovyeva Svetlana Nikolaevna completed Graduation from Ulyanovsk State Agricultural Academy, Department of Veterinary Medicine, in 2005. Since 2014, she has been working as a Researcher in the Ekaterinburg Medical Research Center for prophylaxis and health protection in industrial workers, Department of Toxicology and Biological Prophylaxis. She authored or co-authored six scientific papers, included two in peer-reviewed international journals, and presented her work to several scientific meetings, both national and international.

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ADDRESSING MENTAL HEALTH PROBLEMS OF READYMADE GARMENT WORKERS

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Bangladesh garment sector is pre-dominated by women comprising 85% of 4 million workforces. Mental distress affects their work life, productivity leading to a poor work-life. The normal day of women worker starts at 4 am, cooks food in the common kitchen available for 4-5 families, goes to work at 7 am, and has a longer work day till 7 pm, then is back to take care of her family and goes to bed between 10-11 pm. She has no time of her own, a victim of violence and abuse both in the factory and work, no one to share her pain. Factory management don't realize the fact when psychosocial challenges and issues go unaddressed, it impacts workers' effectiveness in the work place. The pilot intervention by SNV with 600 workers evidenced how introducing psychosocial counsellor at workplace impacted the situation in factories. Welfare officers, who are the first contact point for workers in factory, were trained by certified psychologists and counsellors, and these trained para-counsellors were institutionalized inside factory. In words of the counsellor within two month of introduction and program awareness, three women came with anxiety and one of them had four sessions with the counsellor for mental relief, three women reported work stress and took three separate counselling sessions, others include conflict

with supervisor, family conflict, financial crisis, relationship issue and the resulted anxiety. On success of this intervention, SNV is now moving towards workers wellbeing management course for developing counsellors for the ready-made garment sector to address worker psychological issues.

Biography

Farhtheeba Rahat Khan is a development professional with experience backed-up by private sector interventions and development sector working realities and challenges. As the lead of private sector health project, she undertook studies and worked on the policy front with Ministry of Health its directorates for formulation of policy framework, guidelines and accreditation systems in the health training, and emphasized on avenues for women employment in the health sector. Currently, she is the Team Leader for 'Working with Women' project implemented by SNV where she is facilitating interventions in garment factories, to ensure health and well-being in a sustainable manner. Her research interests include: child psychology and how to induce effective childhood learning retaining the same framework; work life patterns affecting women's attitude and its impact on family and society and; measuring changes and its attribution to a single factor: the complexity around it and its authentication challenges.

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CIRCADIAN RHYTHM CHANGE AND SHIFT WORK SLEEP DISORDER IN KOREAN FIRE FIGHTERS

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The circadian rhythm of shift workers changes according to their work schedule. Circadian rhythm disruption induces shift work sleep disorder (SWSD), which is one of the most common health hazards of shift work. We measured the circadian rhythm and sleep pattern in Korean fire fighters to investigate the relationship between circadian rhythm and symptoms for SWSD. The subjects were fire fighters in Seoul and Ulsan. 139 shift workers and 32 day workers (as control group) were recruited. We measured distal skin temperature to identify the circadian rhythm, daily activity to analyze the sleep pattern, and check bleed cortisol and urinary cortisol and 6-sulfatoxymelatonin. We used iButton® Temperature Logger (iButton® DS1922L, Maxim Integrated Products, Inc., San Jose, CA, USA), which is a computer chip enclosed in a 16-mm-thick stainless steel can. The device was set to measure wrist temperature every 5 minutes, and attached at the palmar side of the subjects' non-dominant wrist. We performed cosinor

analysis to analyze the circadian rhythm of wrist temperature. We used wGT3X-BT (ActiGraph, Pensacola, FL) to measure daily activity of the subjects and analyze their sleep patterns. The wrist temperature and daily activity measurement was performed in day work, night work, and 24 hours work. The measurement started in November 2017, and will be completed around February 2018. We will analyze the data since then.

Biography

Tae-Won Jang completed his Graduation as Medical Doctor from Dong-A University College of Medicine, with the specialties of Occupational and Environmental Medicine. He obtained his Post-graduation from Dong-A University Graduate School of Preventive Medicine. Presently, he has been working at Hanyang University College of Medicine and Hanyang University Guri Hospital.

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DAY 1
May 28, 2018

Sessions

**Occupational Health and Risk Management
Occupational Public Health | Occupational
Health and Industrial Hygiene | Occupational
Health and Mental Health**

Session Chair

Anna Tompa

Semmelweis University, Hungary

Session Chair

Frederic Dutheil

University Clermont Auvergne Clermont-Ferrand, France

Session Introduction

Title: The Initiation of Jawa – Bali Control Center's Health Programme for Dispatcher to Prevent Occupational Diseases

Dian Aprilia Ratnasari, PT PLN Jawa-Bali Control Center - South Jakarta, Indonesia

Title: Effects of Mental health workplace promotion program on Work-related stress and coping skills of working women

Ozlem Koseoglu Ornek, Istanbul Bilgi University, Turkey

Title: Evaluation of Workplace Exposure to naturally occurring Radioactive materials (norm) in an Oil & Gas Industry, State of Kuwait

Yousef Al-Yousifi, Kuwait Oil Company, Kuwait

Title: Sleep disorder Investigation of night shift workers using analysis of Korean worker's specific health examination data and questionnaire

Jihye Lee, Occupational Safety and Health Research Institute (OSHRI), South Korea

THE INITIATION OF JAWA – BALI CONTROL CENTER’S HEALTH PROGRAMME FOR DISPATCHER TO PREVENT OCCUPATIONAL DISEASES

Dian Aprilia Ratnasari and **Kemas Ferri Rahman**
PT PLN (Persero), Indonesia

Occupational Safety and Health (OSH) has paramount importance in PT PLN P2B Jawa-Bali Transmission Grid Control Center. HSE department under Occupational Safety and Health Management System (OHSMS) continuously ensuring and improving the safety and health of the employees since PT PLN. P2B is responsible for feeding electricity to the mainland Jawa and Bali without disturbances. Occupational health is considered as integral factor to achieve company’s missions, which has zero interruption and mistake due to human error and operational excellence of Jawa-Bali main transmission network. Dispatching functions of the centralized control centre has the main tasks to manage, monitor, and maintain the trunk network as well as maneuver’s in case of power outages all the time. The demand of the job requires dispatchers to standby in front of screens under pressure continuously that exposed them to many health hazards such as vision problems, back pain, heart diseases, colon cancers, and other musculoskeletal issues. Therefore, a

complete and integrated dispatcher’s health programme has been designed to prevent occupational health issues such as specially designed sports venue for dispatchers, additional health kit and frequent counseling by physicians to ensure the health condition of dispatchers.

Biography

Dian Aprilia Ratnasari has completed her Bachelor’s Degree in Chemical Engineering from Sepuluh Nopember Institute of Technology Surabaya (ITS), Indonesia. She has finished her Bachelor Thesis Project in Biomass and Conversion of Energy Laboratory about Gamma Oryzanol based Biodiesel from Rice Bran Oil with Deep Eutectic Solvent. She is the Staff of Occupational Health and Safety (OHS) Sub Division in Health, Safety, Security, and Environment of PT PLN (Persero) Jawa-Bali Control Center, South Jakarta, Indonesia.

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EFFECTS OF MENTAL HEALTH WORKPLACE PROMOTION PROGRAM ON WORK-RELATED STRESS AND COPING SKILLS OF WORKING WOMEN

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This study proposes to determine effect of Workplace Mental Health Promotion Program on work-related stress and coping skills of women worker. The research was designed as pre-post-test control group research. The sample consisted of 35 women workers in each group. Reminder mesaj, video, whatsapp text, check-list sheets, camera recording methods were used at fallow up stage of the program Workplace Mental Health Promotion Program was applied to intervention group on the base of Work-related stress model. General occupational nursing services were applied to control group members. The research measurements are Sociodemographic characteristics form, mental symptoms scale, physical symptom scale, social support scale, Brief coping profile scale, IgA enzyme and cortisol hormone analysis. Data were collected before and after the intervention, at 1st, 3rd months following the program. The mean age of the workers was 32,3±9,01. After the program intervention, there was found statistically significant differences between the intervention and control group with regards to work-related stress, physical symptoms, social support, work performance, and coping skills which were seeking help for solution, changing mood, changing point

of view, avoidance and suppression and emotional expression involving others. Also, there was significant differences with regards to IgA enzyme and cortisol hormone score before the program intervention and just after the program intervention in the intervention group. (p 0.000). Workplace Mental Health Promotion Program was found to be effective on work-related job stress management and promoting effective coping skills of women workers.

Biography

Dr. Ozlem Koseoglu Ornek received my master degree and PhD in department of Public Health Nursing from University of Istanbul (Turkey). I have managed many different public health projects (*occupational health, assessment, health promotion, prevention, treatment, epidemiological research...*) in variety village, schools, community health centres and at workplaces. My current focus is on women and child workers' health, occupational stress and management, health promotion and HIV/AIDS. Also, I give consultancy to textile workers and work voluntarily as a consultant about occupational health and safety, healthy life behaviours, risk assessment and hygiene in elementary, high schools and vocational training schools.

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EVALUATION OF WORKPLACE EXPOSURE TO NATURALLY OCCURRING RADIOACTIVE MATERIALS (NORM) IN AN OIL & GAS INDUSTRY, STATE OF KUWAIT

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Kuwait Oil Company, Kuwait

Kuwait Oil Company (KOC) is one of the major oil and gas exploration industry in the State of Kuwait and its operational facilities spread all over the Country and the area for its operation is about 1,000 sq.km. KOC consists of major oil and gas drilling and processing facilities spread all over West, South East and North Kuwait fields. Various Occupational Health (OH) hazards are present in the regular operations of the company and Naturally Occurring Radioactive Materials (NORM) is considered as one among the OH hazards. NORM exposure may lead into occupational illnesses to the workers. Qualitative risk assessment was carried out and the risk assessment identified NORM as one of the OH risky factors in the activities related to drilling and other operations in the company. The risk assessment recommended an exposure evaluation for NORM in most of operational and drilling facilities in the company. As recommended, an exposure evaluation was carried out in the area and personnel level in the selected operational and drilling facilities for assessing the current NORM exposure among the workforce in the company. This paper outlines the methods and results of

the exposure evaluation and quantification of occupational exposures to NORM among the workforce in the company and such estimated exposures is used as a baseline for assessing the future impacts. Exposure evaluation is expected to aid for developing OH database on NORM for use in local regulations and resource allocations for the intervention in the oil and gas sectors in Kuwait.

Biography

Yousef Al-Yousifi is currently working as Chief Industrial Hygienist (CIH) for Health & Environment Team in Corporate HSE Group at Kuwait Oil Company. He has graduated in Genetics from Aberdeen University, UK. His areas of expertise are Industrial Hygiene and Environmental Management. He has more than 12 years of experience in Industrial Hygiene, Exposure Assessment and Environmental Studies and Management. He has involved with many occupational health and environmental initiatives e.g., implementation of contractor's pre and periodical medical examinations, hazardous job evaluation, exposure evaluation of OH hazards, NORM management program and other projects in KOC, Kuwait.

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SLEEP DISORDER INVESTIGATION OF NIGHT SHIFT WORKERS USING ANALYSIS OF KOREAN WORKER'S SPECIFIC HEALTH EXAMINATION DATA AND QUESTIONNAIRE

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The items targeting night shift workers for the Korean worker's specific health examination were added gradually from workplaces with 300 or more employees in 2014 to workplaces with 50-299 employees in 2015. The objective of the study was to investigate the condition of sleep disorder in three occupational groups of night shift workers. The 2014 and 2015 data of the Korean worker's specific health examination conducted by the Korea Occupational Safety and Health Agency (KOSHA) were analyzed. Surveys using different types of questionnaires were conducted in 2017. The subjects were apartment workers, hospital workers, and taxi drivers. The prevalence of moderate to severe insomnia was 6.6% (12,789 out of 193,864) in men and 11.1% (9,669 out of 88,258) in women from the 2014 Korean Worker's Specific Health Examination. The prevalence of moderate to severe insomnia was 5.0% (23,469 out of 467,290) in men and 6.9% (13,174 out of 191,877) in women from the 2015 Korean Worker's Specific Health Examination. The surveys showed that the prevalence of moderate to severe insomnia was 7.0% (15 out

of 214) in apartment workers, 16.6% (29 out of 295) in hospital workers, and 12.2% (27 out of 222) in taxi drivers. The factors associated with sleep disorder differed by group. Depressive symptoms and fatigue were found to increase the risk of sleep disturbance in all three groups. Caffeine intake and the number of night shifts were significant variables in apartment workers, napping during night shifts was a significant variable in hospital workers, and satisfaction with income was a significant variable in taxi drivers.

Biography

Jihye Lee completed her Graduation as Medical Doctor from Catholic University of Korea. She has specialties of Preventive Medicine and Public Health from Chung-Ang University. Later on, she started working at Occupational Safety and Health Research Institute (OSHRI) where she has continued her research.

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DAY 2

Workshop



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THE IMPACT OF 35,000 MEGA WATT PROGRAM IN OCCUPATIONAL HEALTH AND SAFETY (OHS) IMPLEMENTATION IN INDONESIA

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The “35,000 Mega Watt Electricity for Indonesia” Program is proclaimed by the Indonesian Government to meet electricity needs throughout Indonesia, in the hope that adequate and equitable supply of electricity at affordable prices can increase the investment and economic growth of the community. PT PLN (Persero) as the largest electricity service provider in Indonesia is mandated by the Government to implement the program. The construction of the 35,000 MW Program is in the form of electricity installation (Power Plant, Transmission, and Distribution Network) which involves a lot of human resources both PLN’s internal employees as holding company, subsidiaries of PLN, and contractors. In the process of building the project, PLN must ensure the safety and health protection of workers in the field, PLN also must ensure the safety and health of the communities surrounding the project development. The scope of work of PLN which is majority in construction and electrical works has very high employment risks and can have impacts on the safety and health of employees. In order to provide safety and health protection as well as efforts to prevent work accidents, PT PLN (Persero) cooperates with the government, in particular the Ministry of Manpower, the Ministry of Energy and Mineral

Resources, and the Electricity General Directorate to conduct supervision intensively and consistently towards the fulfillment and implementation of Occupational Health and Safety (OHS) aspects in the project work. PLN with regulatory support from the Government sets out work safety and health commitments and procedures for each of the project activities, including:

1. Commitment of the Board of Directors (BOD) on Safety
2. Electricity Safety
3. Occupational Health and Safety Maturity Level
4. Safety Inspection (Pre and On Job Progress).

Biography

Mr. Bintang DWI Putro has been graduated from Business Management Administration Faculty in Brawijaya University, Indonesia. Previously he worked at PT PLN (Persero) South Kalimantan dan Central Kalimantan Region, Region Office, Kalimantan in OHS sub division and presently he is working at the PT PLN (Persero) Head Office, Jakarta, Indonesia as a Staff of OHS Sub Division in Health, Safety, Security and Environment Division.

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DAY 2

Scientific Tracks & Abstracts



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DAY 2

May 29, 2018

Sessions

Bio Polymers And Bio Plastics | Advanced Materials Science | Nano Composites | Nano Technology In Materials Science and Others

Session Chair

Victor Songmene

Product Processes and Systems Engineering Laboratory
(P2SEL), Canada

Session Co-Chair

Anna Tompa

Semmelweis University, Hungary

Session Introduction

Title: Prevalence of dry eye disease in visual display terminal workers: A systematic review and Meta-analysis

Frederic Dutheil, University Clermont Auvergne Clermont-Ferrand, France

Title: Occupational Health and Safety Potential Hazards in PT PLN (Persero)

Kemas Ferri Rahman, Bintang Dwi Putro, PT PLN Jawa-Bali Control Center - South Jakarta, Indonesia

Title: Impact of Climate change and the associated disaster risk reduction efforts in Urban communities of Ghana - A review

Benjamin Osafo Carlis-Paittoo, University of Energy and Natural Resources, Ghana

EuroSciCon 

Occupational Health 2018

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PREVALENCE OF DRY EYE DISEASE IN VISUAL DISPLAY TERMINAL WORKERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Frédéric Dutheil^{1,2,3,4}, Fouad Marhar⁵, Gil Boudet¹, Christophe Perrier¹, Geraldine Naughton³, Alain Chamoux¹, Pascal Huguet², Martial Mermillod^{6,7}, Foued Saâdaoui⁸, Farès Moustafa¹ and Jeannot Schmidt¹

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³Australian Catholic University, Australia

⁴WittyFit, France

⁵University Hospital of Toulouse, France

⁶Université Grenoble Alpes, France

⁷Institut Universitaire de France, France

⁸Saudi Electronic University, Saudi Arabia

Objective: To evaluate the prevalence and risk factors of dry eye disease (DED) in workers using visual display terminals (VDT).

Design: Systematic review and meta-analysis.

Data sources: We searched PubMed, Cochrane Library, Embase and Science Direct databases for studies reporting DED prevalence in VDT workers.

Results: 16 of the 9049 identified studies were included, with a total of 11 365 VDT workers. Despite a global DED prevalence of 49.5% (95% CI 47.5 to 50.6), ranging from 9.5% to 87.5%, important heterogeneity ($I^2=98.8\%$, $p<0.0001$) was observed. Variable diagnosis criteria used within studies were: questionnaires on symptoms, tear film anomalies and corneal epithelial damage. Some studies combined criteria to define DED. Heterogeneous prevalence was associated with stratifications on symptoms ($I^2=98.7\%$, $p<0.0001$), tears ($I^2=98.5\%$, $p<0.0001$) and epithelial damage ($I^2=96.0\%$, $p<0.0001$). Stratification of studies with two criteria adjusted the prevalence to 54.0% (95% CI 52.1 to 55.9), whereas studies using three criteria resulted in a prevalence of 11.6% (95% CI 10.5 to 12.9). According to the literature, prevalence of DED was more frequent in females than

in males and increased with age.

Conclusions: Owing to the disparity of the diagnosis criteria studied to define DED, the global prevalence of 49.5% lacked reliability because of the important heterogeneity. We highlight the necessity of implementing common DED diagnostic criteria to allow a more reliable estimation in order to develop the appropriate preventive occupational actions.

Biography

Frédéric Dutheil is a Professor in Medicine; Medical Doctor in Occupational Health, Physiologist and Researcher at University Hospital of Clermont-Ferrand (CHU) and; a Clinical Fellow of the Australian Catholic University. He is member of the laboratory of metabolic adaptations to exercise in clinical and pathological conditions from 2006 to 2015; his work on biomarkers of stress led him to the creation and the Head of the physiological and psychosocial stress team at UMR CNRS 6024. He is the Scientist of Wittyfit, a software designed to improve health of workers, through a personalized and individualized feedback of their health, taking into account job characteristics. He is now aiming at building tools for objective measures of stress

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OCCUPATIONAL HEALTH AND SAFETY POTENTIAL HAZARDS IN PT PLN (PERSERO)

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PT PLN (Persero) is a state electric company in Indonesia and the biggest electric company in Southeast Asia, has asset value amount 48 billion USD which consists of power plant generation, transmission, and distribution. PLN also has 51.000 employees and 230 Business Units. PLN prioritizes the occupational health and safety for every business function to support company productivity and electric supply continuity. PLN always keeps trying to improve continuously how to manage safety and health, not only occupational safety as a direct and priority aspect, but also occupational health, because human life is about short term (safety) and long term (health). PLN is committed to protect occupational health and safety for employees by applying OHS regulation thoroughly. As a provider company of electric power, employees in PLN have a high risk of having work accidents, such as electrical shock/electrocution, falling from height, hit by materials, pinched, drowning etc. All work accidents have some impacts for the victims: fatality, burns, illness, disability and paralyzed. Related to occupational health, as an impact of work accident except fatality, usually victim need a long medical treatment and it will cost a lot. Furthermore, victim becomes disabled or paralyzed. There are various potential work

related diseases in PLN, such as deafness, ergonomic diseases, respiratory diseases, impaired vision, kidney illness, and etc. All work related diseases can be prevented by applying OHS Management System consistently, periodic medical checkup, and always using PPE (Personal Protective Equipment) which suitable with standard and job.

Biography

Kemas Ferri Rahman has graduated from the Environmental Engineering Master's Degree Program in Bandung Institute of Technology, Indonesia, and Civil and Environmental Engineering Bachelor Degree Program in Bogor Agricultural University. Presently he is working at the PT PLN (Persero) Head Office, Jakarta, Indonesia as a Staff of OHS Sub Division in Health, Safety, Security, and Environment Division.

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IMPACT OF CLIMATE CHANGE AND THE ASSOCIATED DISASTER RISK REDUCTION EFFORTS IN URBAN COMMUNITIES OF GHANA - A REVIEW

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The ever-increasing frequency and magnitude of natural and human induced disasters, urban population growth and low coping capacities, are responsible for greater disaster vulnerabilities, among various communities in the world. An overwhelming research and scientific census maintains that climate change is human induced by the use of fossil fuels, which emits greenhouse gasses into the atmosphere and other human activities, such as agriculture and deforestation. These interlinked challenges promote the risk of disasters, and threatens sustainable development. Climate change is a priority given that almost 90% of recorded major disasters are caused by natural and anthropogenic hazards from 1995 to 2015 were linked to climate change back lashes. This paper examined how the fields of Disaster Risk Reduction and Climate Change Adoption have contributed to the understanding of how urban settlements are responding to climate change risks, exposures and hazard impacts. This article concludes that, the integration of agreements including the Kyoto Protocol, the Hyogo and Sendai Frameworks into Ghana's institutional setting has been very challenging in terms of creating a national risk reduction policy and recommends that collaboration among the key emergency planning institutions are upheld.

Biography

Benjamin Osafo Carlis-Paittoo was born on October 6, 1968, in the Nkawkwah-Kwahu. He attended the St. Peter's High school after obtaining the 'O' levels in the year 1982. He was enlisted into the Ghana National Fire Service (GNFS) in November 1992 and, subsequently, passed out in July 1993. Benjamin O. Carlis-Paittoo is lecturer for the BSc. (Fire and Disaster Management) programmer at the Department of Environmental Management – University of Energy and Natural Resources, Sunyani, Ghana. He holds a Post-Graduate Diploma in Occupational Safety, Health and Environment (Ghana Institute of Management and Public Administration, GIMPA), MA (Environmental Management and Policy, University of Cape-Coast), MSc. (Economics of Technology and Development, UCC) with research thesis on Biotechnology and Genetically Modified Foods, also MSc. (Disaster Management, UCC) and MPH (Public Health, Kwame Nkrumah University of Science and Technology, KNUST) with in-depth research into Injury Control and Disabilities. He won the prestigious Forgyat-Quartey Fellowship Award in 2012 to pursue the Public Health programmer. He holds the Post Chartered Diploma in Forensic Audit from the Chartered Institute of Accountants, Ghana.

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DAY 2

Video Presentation



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PROPOSING AN INTEGRATED METHOD FOR ERGONOMIC RISK ASSESSMENT INVOLVING PHYSICAL AND PSYCHOSOCIAL RISKS

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Increasing consumption speed in our globalized world has put businesses into a fierce competitive environment. With increasingly competitive pace, businesses have been reluctant to offer employees an ergonomic work environment to get more production and service output. Workers who are expected to produce and service increasing amount of output have begun to work in bad ergonomic environments increasingly. Importance of ergonomics has been noticed rapidly as ergonomically unsuitable working conditions have led to a decline in the productivity of employees. One of the most important study areas of ergonomics is to investigate the risks that cause occupational musculoskeletal system diseases (OMSD) and the development of preventive measures for these conditions. The physical and psychosocial ergonomic risks are quite influential in the formation of OMSD. There are many physical and psychosocial ergonomic risk assessment tools. However, there is no method that merges these two different risk groups to assess them at

the same time. Physical ergonomic risk assessment methods alone or psychosocial ergonomic risk assessment methods alone do not provide sufficient information on hazard dimensions of ergonomic risks. The purpose of this study is to propose a combined ergonomic risk assessment method by weighting outcomes of physical ergonomic risk assessment methods and psychosocial ergonomic risk assessment methods with multi criteria decision making methods and provide an integrated evaluation.

Biography

Elif Güler is a Research Assistant at Celal Bayar University, Department of Industrial Engineering and Master of Science student at Dokuz Eylul University (DEU), Department of Industrial Engineering (IE). Her research interests are "Ergonomics, risk management and, multi-criteria decision making".

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A LABOR RISK FACTOR IDENTIFICATION MODEL FOR AGRICULTURAL ORGANIZATIONS USING LEARNING MANAGEMENT SYSTEM TOOLS

**Claudia Milena Ospina López, Gregorio Enrique Puello-Socarrás and
Liliana Vargas Puentes**

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Occupational risk factors are known as all those environmental conditions and working materials that can potentially affect workers health and produce undesirable effects upon sector productivity. In this sense, it is necessary to develop mechanisms that allow the identification, prevention and control of these threats, taking as a starting point the economic activity of the organizations. The purpose of this research was to build a learning tool to raise awareness in the community, using information and communication technologies (ICT), reducing incidents, accidents and occupational diseases in the agricultural sector of the Bogotá Savanna, achieving better compliance with the established regulations. To that end, an initial diagnosis of the occupational risk factors will be carried out according to its specific field, by means of the implementation of an occupational risk matrix in 3 work places that fulfill different functions in the same process, taking into account the information obtained, a tool based on E-learning is designed. This tool will be implemented in the 3

selected companies to validate its effectiveness and coherence in obtaining and analyzing the information collected, the data obtained will be compared with the initial information and an analysis of expected results will be carried out. Once this is obtained, the tool will be evaluated through an experimental design with a control group and an analysis of the main risk factors will be carried out to generate a strategy that minimizes the labor risks identified in the company's object of study.

Biography

Claudia Milena Ospina López graduated from Universidad Distrital Francisco Jose de Caldas as Biology Licensee, with the specialties Health and Safety at Work Management from Escuela Colombiana de Carreras Industriales. She completed her Post-graduation in Environmental Sciences from Ambientales UDCA and then started working at Corporación Universitaria Minuto de Dios where she has continued research.

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THE SAFETY CONCERNS OF NIGHT SHIFT SCHEDULE: IMPLICATIONS FOR FAMILY, HOMES AND HUMAN HEALTH

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Wealth does not correlate with health, neither does the ability to work longer hours and night-shift determine the level of one's wealth. It is important to consider health and safety first when accepting new job schedule or offers. This study investigates how night-shift schedule has contributed to workers' poor well-being, quality of life and marriages. One-hundred thirty-nine night-shift workers voluntarily participated in the study. Respondents were grouped into three age categories: 18-34, 35-54, and 55-74. Responses were quantified and an adequate statistics analyses were run on the data. Results revealed that 29% of the respondents felt depressed and 62% were shown to have low energy after work night-shift schedule. The risk of divorce among the married respondents is 1-person in every 10-workers. Poor appetite revealed 1 out of every 4-workers and 1 out of 2-workers have the risk of loosen interest in their usual activities. Fifteen percent reported having very bad quality of life. Twenty-nine percent of the respondents revealed having concentration problems. The paired t-test results reveal that night-shift schedule in one way or another has a statistically significant effect on the workers well-

being who work on night shift ($t = 23.5, df = 138, p < 0.0001$). The level of divorce, poor quality of life, less interest in usual activities and health issues as a result of workers' schedule suggest the need for better work schedule structuring. The findings from this study highlight potential damages night-shift schedule has done to human well-being and life style in general.

Biography

Fasanya B K has Doctorate degree from North Carolina Agricultural and Technical State University, with the specialties including Ergonomics and Human Factors and Occupational Health and Safety. He worked as a Senior Research Associate with the US Army in the Division of Auditory Protection and Performances. His research interests include Occupational Health and Safety, Ergonomics/Human Factors, Workers' well-being, Noise Assessment, Auditory protection and performances, Lean and Six Sigma Principles, and Data Analysis. He is particularly interested in analyzing how noise exposure, stress, time, work activities and gender differences affect human behavior/performances in different environments, (natural or man-made)

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DAY 2

Young Research Forum



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TWEETING SAFETY: LIKES, POSTS AND SOCIAL ENGAGEMENT

Kelly Jaunzems

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The millennial generation is the most technically advanced age segment to join the workforce. Statistically, since younger workers are more at risk of accidents and workplace injuries, they are also the age group at greatest risk in occupational safety and health (OSH) terms. Given this, millennials struggle to take seriously the low-tech, top-heavy communication channels used by OSH professionals. Used to immediate responses, 140 character communications, shares, likes and visual imagery, this group of workers does not take time to read the ubiquitous safety notices on a pin board behind greying glass. This paper suggests that the Facebook and Twitter social media community rapidly building around 'safety fails' offers a novel channel for engaging this audience. The challenge is to harness a popular culture of compromised safety values to build a cohesive and inclusive conversation around ways to keep young people safe at work.

Biography

Kelly Jaunzems is a PhD candidate in Edith Cowan's School of Arts and Humanities. Following an extensive career in hospitality, food and beverage management, in Britain and Australia, she confirmed her desire to engage in in-depth research via a Masters in Occupational Health and Safety. This two years of intensive study, drew her attention to the fact that OHS communication practices have generally advanced little over the past quarter century. Her PhD research explores the reasons why this might be and constructs a framework through which conservative practitioners within the OHS profession might feel empowered to use social media.

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OPTIMIZING OCCUPATIONAL SAFETY IN THE MANUFACTURING CONTEXT THROUGH SIMULATION OF HAZARD AND RISK PERCEPTIONS

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Occupational risk assessment and hazard identification policies play a vital role in industrial health and safety regulations and compliances. However, traditional risk assessment and hazard identification procedures in the manufacturing industry employ only a 2-dimensional approach in this regard. The purpose of this paper is to investigate the applicability of 3-dimensional visual simulation to foresee and preempt situations and conditions of high probabilistic occurrence. Simulated factors have been through related work practices, environment, conditions and people. Meanwhile, applications of 3-dimensional simulation in occupational safety and health have achieved tremendous success in mining, driving, construction, aviation etc. However, studies of its application in the management of industrial risks and identifications of hazards in manufacturing context are silent. This paper therefore reviews the current risk and hazard identification methods in the industry. Results of the review attest to this gap in preemptive visual risk assessments. Recommendation of the research exhibits simulations of potential risks and hazards with the Visual Components software. The proposal has been analyzed through stereoscopic virtual reality glasses showing clear occupational risks and hazardous issues in a manufacturing industry model that demands attention.

Biography

Ebo Kwegyir-Afful is a PhD student in the Department of Industrial Management in the School of Technology and Innovation of the University of Vaasa. He has numerous industrial experience/exposure and passionate with issues of occupational health and safety. He has published a conference paper on "Effects of occupational health and safety assessment series (OHSAS) standard: A study on core competencies building and organizational learning".

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SUSTAINABLE RETURN TO WORK AFTER ILL-HEALTH: PERSONAL AND SOCIAL FACTORS

Abasiama Etuknwa, Kevin Daniels and Constanze Eib

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Introduction: Helping workers return to work (RTW) early has become crucial as evidence from studies suggests that extended absence from work becomes detrimental to physical and mental health, making it difficult for workers to RTW at all, which then increases bespoke costs. However, there is still a significant gap in knowledge regarding the sustainability of RTW after ill-health.

Objective: A systematic review was conducted to synthesize empirical evidence on the impacts of personal and social factors such as; support from leaders and co-workers, job crafting and employee's personal characteristics on sustainable RTW after ill-health.

Methods: 79 studies fulfilled the inclusion criteria. All 79 studies were critically appraised, and data were extracted and synthesised.

Results: The narrative synthesis showed: all evaluated personal and social factors showed a general consistent positive effect on sustainable RTW; studies assessing job crafting and employee's personal characteristic like duration of absence, economic status/income and job contract/ security were too few to draw a definite conclusion on, even though they presented exciting areas for future studies and; findings also produced inconsistent evidence surrounding the effects of gender, implying that gender likely interacts with a factor or range of factors to influence RTW.

Conclusion: Sustainable RTW was evident across studies, indicating that although age and education influence the outcome, returning workers are more likely to have a positive attitude towards work and confidence in carrying out their duties on RTW in an environment where the RTW fosters support from both leaders and co-workers.

Biography

Abasiama Etuknwa is currently a PhD student at Norwich Business School- University of East Anglia. She holds a BSc and MSc degree in Biochemistry and Environmental Health respectively. Her research interests are within the areas of occupational health and safety, ergonomics and work-related well-being. She is particularly interested in determining practical measures that would reduce work-related risk to health, reduce sickness absence and help employees on sick leave return to work sustainably.

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