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**New insights in occupational
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Occupational Medicine
and
Health Services Research and Evaluation
in Occupational Health

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ABSTRACTS



Session II: "Effective occupational health surveillance I"

Session Date: 15/10/2014

Presentation Time: 11.00 - 13.00

Psychosocial barometer: a new tool and method for employee mental health surveillance

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Abstract

Introduction: Mental disorders have become one of Europe's largest health challenges of the 21st century. In Belgium, one third of the 260000 disability insurance beneficiaries have a mental disorder as primary cause for their benefit claim.

Aim: Develop a psychosocial barometer to monitor mental health in workers to 1) lower the threshold to talk about mental health; 2) detect early mental disorders; 3) prevent disability through early intervention and 4) follow-up mental health; on both organizational and individual level.

Methods: A short questionnaire was developed and implemented measuring work engagement, emotional exhaustion, psychosomatic stress symptoms, depression, anxiety, violence, bullying, sexual harassment, conflicts and coping. A benchmark study was conducted (n = 1500, Flemish employees, all sectors, 54% male, 45% 45 years or older, 41% higher education) to set cut-offs for each sub- and overall score.

Results and discussion: The questionnaire consists of 20 questions. The Benchmark study revealed that 21% of the respondents showed signs of emotional exhaustion, 27% had psychosomatic complaints, and 15% showed depressive symptoms. 17% experienced personal conflicts on a regular basis. The psychosocial barometer is now implemented in worker health surveillance during which the occupational health physician (OHP) discusses the results with the employee in a structured interview, Depending on the percentile scores of the employee in comparison with the benchmark the worker can be referred to a psychologist for further follow-up. In addition, with the group company results, psychologists can also assist with organisational measures or group interventions. Another advantage of the integrated approach is that mental health statistics can be related with physical health indicators over time, such as back pain, over- or underweight or high blood pressure.

Conclusion: The psychosocial barometer allows a screening of mental health, which can be followed by an intervention and preventive measures on both individual and organisational level.

Session II: "Effective occupational health surveillance I"

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Pre-placement Post-offer Screening for Carpal Tunnel Syndrome

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Abstract

Objectives: Carpal tunnel syndrome is a costly disorder for employers. Screening at time of hire allows an opportunity to reduce the potential for future cases. We evaluated post-offer pre-placement (POPP) nerve conduction studies (NCS) for carpal tunnel syndrome (CTS) to test the diagnostic yield and cost-effectiveness of testing in workers from several types of industries.

Methods: 027 newly hired workers underwent baseline NCS, and were followed for an average of 3.7 years for physician diagnosed CTS. Measures of diagnostic yield included sensitivity, specificity, and positive predictive value (PPV). Cost-effectiveness of POPP screening was modeled using a range of inputs including baseline NCS values, cost of testing, medical care and compensation costs, and number of cases potentially avoided.

Results: Overall incidence of CTS was 8.7 cases per 1000 person-years. Abnormal NCS at time of hire was strongly associated with future CTS. Univariate hazard ratios ranged from 2.95 to 11.25, depending on the nerve conduction test parameters used. However, PPV was poor, (6.4-18.5%). Cost-effectiveness of POPP varied with CTS case costs, screening costs, and NCS thresholds, with screening favored when sensitivity was high and screening costs were low.

Conclusions: Nerve conduction studies at the time of hire predict increased risk of future CTS, but positive predictive value is low. POPP NCS screening is used by some employers in the USA, but cost-benefit analysis showed that few employers would benefit from this practice, which inappropriately rejects many healthy workers from employment. Occupational health professionals should not endorse screening practices that fail to show benefit.

Session II: "Effective occupational health surveillance I"

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Presentation Time: 11.00 - 13.00

Quantification of occupational diseases by triangulation of methods

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Abstract

Objectives: This study involving Dutch workers aimed to quantify 1) incidence of occupational diseases experienced by workers, 2) incidence of occupational diseases determined by occupational physician's and 3) the consecutive impact of occupational diseases on work disability and disability adjusted life years.

Methods: To answer the questions, three data-sets were used. 1) During 2012, in a large nationally representative survey Dutch workers (n=25,110) were asked whether they had developed an occupational disease (OD), framed as disease caused by work, during the last 12 months. During 2013, a sentinel of 180 occupational physicians notified the ODs of their (450,000) workers. The notification of a particular OD follows specific guidelines for that diagnosis. During 2011, the occupational burden of disease expressed as disability-adjusted life-years (DALY) was calculated. The DALY combines the time lived with disability and the time lost due to premature mortality.

Results: Three different types of incidence rates for occurrence and impact of occupational diseases varies from 0.3% to 5.8% for a twelve month period. In total 5.8% of Dutch workers indicate that their diseases are mainly caused by work. The incidence of occupational diseases as reported by occupational physicians is 0.3% (267 per 100,000 workers; 95% CI: 253-282) and the majority of these medically diagnosed cases have temporary (55%) or permanent (5%) disability for work. Occupational health risks cause 4.7% (1.8%-8.4%) of the total burden of disease in the Netherlands. The diseases that contribute most to the occupational burden of disease in the working and retired population are back disorders, COPD, burn-out and lung cancer.

Conclusions: Occupational diseases are a significant burden for individual workers, industry and society. Triangulation of methods and perspectives quantifies the problem and burden of ODs and gives insight in priorities for policy, preventive actions in different economic sectors of industry and intervention research.

Session II: "Effective occupational health surveillance I"

Session Date: 15/10/2014

Presentation Time: 11.00 - 13.00

Unemployed persons' health surveillance for maintaining work ability – network of actors and client experiences

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Abstract

Objectives: Aim of the study was to describe unemployed persons' health surveillance for maintaining work ability and their experiences of the service.

Methods: Occupational Health Counselling for Unemployed –project was carried out in Kuopio, Finland in 2008-2010. Unemployed persons (15-55 years of age, N=131) were offered preventive health service in public health center by an occupational health nurse (OHN). The clients came from various sectors. During the consultation the OHN surveyed client's health and work ability by interview and questionnaires. As a result the OHN and the client planned in collaboration an individual action plan, including needed consultations in other experts either in health care or other sectors. The follow-up questionnaire was returned by 42 participants (32%).

Results: The network of actors were multidisciplinary. Referring organizations included for example employment and economic development offices, social welfare offices, educational institutions and intermediate labor market. Based on the individual plan the unemployed were referred to different actors of health care, career counsellor, vocational psychologist, Social Insurance Institution, intermediate labor market etc. In the follow-up survey (n=42), 79% of the respondents thought that the health check was needed, 73% got sufficient feedback and 88% considered that it gave a true picture of their health status, while 71% considered that their own needs and views were taken into account. Almost all considered that they by themselves (97%) and unemployed persons as a whole (95%) needed periodic health surveillance. The individual action plan had realized for half of the respondents.

Conclusions: Unemployed persons' health surveillance for maintaining work ability needs a complex networking of different actors from health care, social and employment sectors. While the coordination role of the OHN in this Finnish context was important, still half of the individual action plans were not realized. The client satisfaction for the service was high.

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Feasibility of prevention consultation on cardio metabolic risk by the occupational physician as part of occupational health surveillance

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Abstract

Objectives: Dutch occupational physicians (OPs) can play a role in the prevention of cardiometabolic diseases by occupational health surveillance. Together with general practitioners and three health foundations, a Prevention Consultation Cardiometabolic Risk (PC CMR) was developed by the Netherlands Society of Occupational Medicine (NVAB). The aims of this study were to assess the feasibility of this PC CMR in daily practice, in particular, the practicality and the acceptability.

Methods: Fourteen OPs participated in the study. A one-day training course on the background of the PC CMR and the content of a guidance document was given. Each OP was asked to carry out the PC CMR in one or more companies. Data on practicality and acceptability were collected by online questionnaires and interviews with OPs and involved employers and employees.

Results: Only four OPs carried out the PC CMR. From the 228 workers that were invited, 36% participated by completing the online risk estimation or the lifestyle test. From the 13 workers that consulted the OP, six had a high CMR. Eight workers were referred to their GP for completing their risk profile and possible treatment. In 40% of the workers that completed the risk estimation, work-related risk factors were present but only three workers consulted their OP on this. Lack of financial means and low priority in the companies, and time constraints of the OPs were the most mentioned reasons for not starting the PC CMR during the study period. When started, the experiences of the individual recipients (OPs, employees, and employers) were in general positive.

Conclusions: In spite of positive findings and experiences of participants, the feasibility of the PC CMR in its current format in the occupational health setting is low. Further development in an occupational health context or tailored inclusion in workers' health surveillance programmes is recommended.

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Detecting sector-specific health risks by means of inter-sectorial differences in medication use

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Abstract

Introduction: During periodical health surveillance, occupational health physicians collect worker medical data, which can be explored on group level for the detection of sector specific health disorders. Recently, Group Idewe¹ has integrated all individual data into a single data warehouse, facilitating the study of relationships between different variables of interest. In the current study, we explored differences between sectors in medication use, which may be indicative for underlying sector-specific health risks.

Method: Data of periodical health surveillance of the year 2013 were considered and included around 220.000 workers. Nine occupational sectors (NACE) were considered: healthcare, industry, trade, government, services, construction, education, transport, and catering. Four kinds of medication were included: medication for pain and inflammation, antidiabetica, neuropsychological drugs, and antihypertensiva. For each kind of medication, the proportion of users was compared between the different occupational sectors. By means of z-tests, the significances of differences in proportions between sectors were tested. The Bonferroni method was used to adjust for multiple comparisons. We further controlled for confounding factors age and sex.

Results: The use of pain and inflammation medication is significantly more frequent in healthcare (11,2%), government (9,7%), and industry (8,9%) compared to the other sectors, also after controlling for age and sex. The same holds for the use of neuropsychological drugs in healthcare (9,0%) and government (7,6%). The use of antidiabetica is significantly more common in transport sector (3,2%), but this effect largely disappeared after controlling for age and sex. Antihypertensiva-use is significantly more frequent in transport (12,1%) and government (11,9%).

Conclusion: In this study we have shown that there are large differences in medication use between sectors, which may point at underlying sector-specific health risks. More elaboration on these findings is needed. This kind of information is of utmost importance to guide problem-oriented health surveillance policy.

Session IV: "Tracing new and old occupational diseases"

Session Date: 15/10/2014

Presentation Time: 15.30 - 16.20

Databased Observational Surveillance of Occupational Asthma

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Abstract

Context: Asthma, allergic or irritative, represents an important part of respiratory diseases with about more than 3 million people concerned in France. Fifteen to 20% of asthma could be attributable to occupational exposures, and the incidence of the "occupational asthma" was estimated to 24/ million. About 400 occupational exposures are already recognized as risk factors and with an increase rate of about 12 per year. These exposures, mainly including flour, wood, latex or animals/plants allergens, can be found in several occupational environments.

Objectives: To use the observational database of the RNV3P network (French National Network of Surveillance and Prevention of Occupational Diseases) investigating the relationship structure of occupational asthma with occupational exposures and therefore drawing the spectrum of Asthma's occupational exposures.

Method: We employed the Observational Surveillance method, based on the Occupational Exposome approach, for an optimal use of the RNV3P database. The method involves structuring the data in terms of an occupational exposome that is a relational network of significant occupational exposures associated with the disease of interest.

Results: From 4 405 cases of Occupational Asthma, 571 distinct hazards were reported out which 168 were identified as "significantly" related to the occupational asthma and 61 exposure patterns are found persistently reported. These occupational exposures include classical usually reported in the literature like flour and wood and emerging hazards like plumes, paper, ethanolamine and nitrogen trichloride.

Conclusion: Observational Surveillance of occupational asthma from the RNV3P has allowed to highlight new occupational exposures, in addition to those already known and to study the dynamic structure of occupational exposures and asthma associations.

Session IV: "Tracing new and old occupational diseases"

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Blind spots in Occupational Medicine

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Abstract

Introduction: The focus of Occupational Medicine is usually restricted to health problems in 'official workplaces' in developed countries. Health problems in (semi-) illegal work settings, among migrant workers, in new types of work and among workers in less developed countries usually get unrecognized, except in case of scandals or disasters as the collapse of a Bangladeshi factory complex, the fate of the Chernobyl waste workers and the working conditions in demolition of vessels on the beaches of India and Pakistan. Awareness of the limited scope and ways for improvement are discussed.

Examples of blind spots:

- Blind spots in agricultural medicine in marijuana growth, and horticulture of tulips. Agriculture is an economic activity with high health and safety risks, but underserved with occupational health and safety care.
- Health and safety risks of migrant workers, outside the scope of labour inspectors and occupational medicine.
- Trans-border problems with outsourcing of 3-D jobs (dirty, dangerous, demanding) towards less developed countries like the drift of the shoe industry from European countries to South East Asia with the associated problems as n-hexane neuropathy.
- New types of work and possible side effects of that work in algae farming and work with synthetic nanoparticles

Discussion: In broadening the focus of occupational medicine international development and collaboration is important. Examples are the programme of collaboration and knowledge transfer between Institutes as FIOH with Institutes in Occupational Health and Safety in East Africa and Danish Universities with Central Africa. Statements the Collegium Rammazzini in migrant workers ([http://www.collegiumramazzini.org/download/16_SixteenthCRStatement\(2011\).pdf](http://www.collegiumramazzini.org/download/16_SixteenthCRStatement(2011).pdf)) and the position statements of multiple professional organizations (ICOH, Int. Respiratory Society etc.) on the World Wide Bann on Asbestos helps awareness raising and endorse activities from international bodies as WHO and ILO.

Session V: "Evidence based interventions and guidelines"

Session Date: 16/10/2014

Presentation Time: 9.20 - 10.45

Workplace Interventions for Preventing Upper Extremity Disorders: A Systematic Review Update

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Abstract

Background: Upper extremity musculoskeletal pain and disorders (MSDs) are a substantial cause of disability in the workplace and workers' compensation costs. While there is a maturing literature specifying the workplace hazards that are associated with MSDs there are relatively few well-designed studies evaluating workplace interventions that may prevent MSDs or their related disability. In 2010 our team (Institute for Work and Health, Toronto, Canada) published a systematic review that identified 36 relevant studies of appropriate quality (Kennedy 2010). The objective of this report is to update the review and identify new studies that address the question "What occupational health and safety workplace interventions are effective in the prevention of upper extremity MSDs?"

Methods: The previous systematic review process was used again for papers published since the last review. The process involved: research question formulation; literature search; relevance review; quality appraisal; data extraction; and evidence synthesis. Review steps were completed with two independent reviewers coming to consensus for each reference. For the synthesis of evidence the new papers were considered along with the papers from the prior review. The evidence of effect of a particular intervention was ranked on a scale from strong evidence (3 high quality studies), through moderate (2 high quality studies or 2 medium and 1 high quality study), limited, mixed and insufficient evidence based on three aspects of the evidence: quality, quantity, and consistency (Slavin 1986).

Results: The following electronic databases were searched from January 2008 until December 2012: MEDLINE, EMBASE, Cumulative Index to Nursing & Allied Health Literature (CINAHL), Canadian Centre for Occupational Health and Safety's CCINFO web, Cochrane Library and Ergonomic Abstracts. This comprehensive search yielded 9909 non-duplicate references. From these references we found 39 new articles that addressed the research question and were of sufficient quality. Methodological quality scores for the relevant studies were higher than those from the previous reviews. Interventions include engineering solutions, administrative methods, exercise, and participatory approaches.

Conclusions: Preliminary results show that the interventions, related to the prevention of upper extremity MSDs, are varied and applicable to a variety of industrial sectors. The evidence was new or changed from the prior review for exercise, biofeedback, tool design, participatory ergonomics, and ergonomics training. We will present a synthesis of the evidence about intervention effectiveness on the prevention of MSDs and provide an update of practical recommendations from our previous reviews.

Session V: "Evidence based interventions and guidelines"

Session Date: 16/10/2014

Presentation Time: 9.20 - 10.45

Effectiveness of a multidimensional intervention among Dutch construction workers on respirable quartz exposure: results from the 'Relieved Working Study'

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Abstract

Objectives: A multidimensional intervention study was performed in order to reduce quartz exposure in the Dutch construction industry: using technical control measures (properly) should increase by targeting organizational and behavioral factors. We aimed to evaluate the effectiveness of the intervention.

Methods: Within this cluster-RCT, eight participating construction companies, selected based on high exposure job categories, were randomly allocated to an intervention (n=4) or control group (n=4). The intervention was systematically developed according to the Intervention Mapping protocol, combining data from a baseline survey, round-table discussions with relevant stakeholders, and the literature. Pre and post-intervention personal respirable dust and quartz exposure measurements (n=282) were taken. Detailed observations gave insight in the use of technical control measures. Questionnaires were used to assess behavioral and organizational factors. Bayesian multilevel analyses were used to evaluate the intervention effect, defined as the difference in exposure reduction between the intervention and control group.

Results: Pre-intervention exposure assessment demonstrated highest respirable quartz levels for concrete drillers, tuck pointers and demolishers (GM respectively 0.20, 0.18 and 0.12 mg/m³), exceeding the Dutch occupational exposure limit (OEL) for quartz (0.075 mg/m³) in 80% of the measurements (maximum = 1.36 mg/m³). Post-intervention exposure assessment showed that the intervention effect was significant for demolishers and tuck pointers (p=0.005 and p=0.008, respectively), but not for concrete drillers (p=0.15). During follow-up 40% of the measurements in the intervention group exceeded the OEL for quartz (maximum = 0.86 mg/m³), whereas this was 60% in the control group.

Conclusion: The intervention resulted in a substantial and significant decline in exposure levels over time in the intervention group for concrete drillers, demolishers and tuck pointers. Ongoing analyses will evaluate the potential contribution of organizational and behavioral factors, e.g., beliefs, knowledge, and social influence, when increasing the (observed and self-reported) use of technical control measures.

Session V: "Evidence based interventions and guidelines"

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Optimum method of delivering cognitive behavioural therapy to the working age group with common mental health problems

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Abstract

Background: Cognitive-behavioural therapy (CBT) is frequently used for treating common mental health disorders (CMHD). CBT may be delivered by different methods, including face-to-face individual therapy; small or large group therapy, telephone therapy, bibliotherapy and computer-based systems (cCBT). However it is unclear which method is the most effective in the workplace.

Aim: To undertake a systematic review to compare the acceptability, accessibility, cost and clinical effectiveness of different methods of CBT delivery for CMHD

Method: A literature search for randomized controlled trials comparing one method of delivering CBT with another was conducted. Ovid MEDLINE, PsycINFO and Embase databases were searched from inception to July 2013. Only articles that included the working age group (18-65) with mild to moderate depression, mild to moderate anxiety, including phobia and adjustment disorder were included. The assessors, (ELG, VVN, KMB) independently read through titles and abstracts and selected complying articles. Full texts were retrieved to determine whether they met the review inclusion criteria.

Results: 1147 articles were identified from the search. 317 titles met the review inclusion criteria. After independent assessor review of abstracts and full papers, seven articles were found to meet the review inclusion criteria. cCBT was as clinically effective as face-to-face therapy for phobia and panic disorders, and may be more cost-effective as less clinician time is required (6 papers). Internet and telephone delivered CBT were equally clinically effective for treatment of depression, but patient engagement was better for telephone-based therapy (1 paper). None of the studies included occupational outcomes.

Conclusion: Current evidence suggests that cCBT may be cost-effective as first line treatment of anxiety/ phobia in the workplace. But despite the frequency of use of CBT for depression in the workplace, there is a paucity of evidence of the optimum mode of delivery in occupational settings.

Session VI: "Trends of occupational diseases"

Session Date: 16/10/2014

Presentation Time: 11.20 - 13.00

Detection and evaluation of trends of sector specific work related diseases in OHS data

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Abstract

Introduction: Belgian Occupational Health Services (OHS) collect big amounts of data during health surveillance, risk assessments, surveys, etc. Most of these data are collected through several applications and stored into several databases for operational reasons. In the current project, we build a data warehouse in which we integrated all data to perform studies on trends in work related diseases.

Methods: Data (including categorized medication use, ICD9-CM encoded sickness absences and health complaints) collected during pre-employment and periodical medical examination between 2010 and 2013 were extracted, transformed and loaded in the data warehouse. A comparative analysis between sectors (NACE) was performed taking into account confounders like, e.g. seniority.

Results: Around 1.100.000 medical health surveillances took place between 2010 and 2013. 51% of the investigated individuals were males; the average seniority was 8 (SD=9), and the average age was 39 (SD = 12) years. 83% of the investigated individuals reported at least one health complaint at the moment of medical examination, 47% were taking medication (of which, e.g. 9% took NSAID or neuropsychological drugs), and 46% reported at least one sickness absence 12 months before medical examination. Important differences were observed between sectors: for instance, health problems, sickness absence and use of medication were up to 20% higher in the health care, industry and government sector compared to services. Somehow surprising, we observed that health complaints, medication use and sickness absence increased rapidly during the first 5 years of working in a sector.

Conclusion: This study illustrates how integrated OHS data can be used for the detection of sector-specific trends in work related diseases. It is clear that the sector where one works has an important impact on health. Further analyses are being carried out to link health data with specific functions and workplace characteristics.

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SIGNAAL: online tool for reporting and assessment of new occupational health risks in the Netherlands and Belgium

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Abstract

Objectives: Changes in work and working conditions may give rise to new occupational health risks. Despite efforts to detect and reduce these risks, it is plausible that new occupational hazards may occasionally introduce new work-related diseases. Early detecting of these new work-related diseases may establish a complementary source of information on new and emerging risks. Our objectives are to develop, implement and evaluate an online tool for reporting and assessment of new occupational health risks by occupational physicians and occupational health experts in the Netherlands and Belgium. Here we present our experiences and first results with SIGNAAL, the Dutch word for signal as well as an acronym for *SIG*nalering *N*ieuw *A*rbeidsgebonden *A*andoeningen *L*oket (*Counter for the identification of new work-related diseases*).

Methods: Development of the online reporting tool with an online form, a public entry website, and assessment procedure was based on an iterative approach with key stages such as development of the online form and assessment procedure, determining system specifications and building, testing and adjusting the system, implementation and communication. The reporting tool was designed to allow both easy and sufficient detailed reporting of suspected new combinations of exposure and health problems. The online assessment tool was designed to be structured and transparent. The reported cases within the first 12 months are presented with their final assessment of newness and work-relatedness.

Results: The online reporting and assessment tool proved to be a tool that can simplify reporting of possible new combinations of health problems and exposure in the work situation in a structured way. It also allows online assessment and evaluation and provides a rich source of stored data for subsequent comprehensive analysis of new and emerging occupational risks. There is a substantial variety in the work-related health risks reported. Most of them were considered work-related and more often relatively unknown than completely new combinations of health and exposure.

Conclusions: A specifically designed online reporting system in an occupational health setting can provide valuable data on possible new and emerging occupational health risks by creating a structured way to report and assess new combinations of health problems and exposure in the work place. Additional work is needed to develop good methods for comprehensive evaluation and communication on findings from this reporting tool.

Session VI: "Trends of occupational diseases"

Session Date: 16/10/2014

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Work-related mental disorders (WMD) by industrial sector in France from 2001 to 2011 – trends and atypical years

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Abstract

Objectives: The study aimed at examining changes in occurrence of work-related mental disorders (WMD) by industrial sector from 2001 to 2011 in France.

Methods: Cases were collected from the French National Network of Occupational Disease Vigilance and Prevention (RNV3P). All WMD considered at least possibly associated with work were included in the study. Occurrences were examined (i) on ratios of the number of WMD reported in a specific industrial sector to the number of all WMD cases each year (proportions) (ii) on ratios of the number of WMD in a specific industrial sector to the number of WMD cases of all other sectors (reporting odds) in the given year. Trends were assessed through Kendall tests and through logistic regression models in order to adjust for age and gender. Signal detection techniques were used to detect atypical years over the period, allowing the assessment of other than monotonous relationships between time and work-related mental disorders occurrences.

Results: The proportion of reported cases of WMD in the communication sector (mail and telecommunication industries) increased over the period. Various chronological patterns were seen in the other sectors including atypical years.

Conclusions: Results were coherent with other sources of information on WMD chronological patterns over the period. These analyses of the RNV3P network data can provide useful information to focus psychosocial risk prevention on relevant sectors.

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Presentation Time: 11.20 - 13.00

A cross-country comparison of the impact of the EU directive 2002/44/EC on the incidence of vibration-related occupational disease

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Abstract

Objectives: EU Directive 2002/44/EC aims to reduce exposure to mechanical vibration at work through several measures including defining European exposure limits for hand-arm-vibration and improving surveillance. The directive came in to effect on 6 July 2005 but a 5 year transitional period was allowed in respect of equipment given to the worker before 6 July 2007 or 9 years for equipment used in forestry and agriculture. Regular and frequent exposure to hand-arm vibration can lead to hand-arm vibration (HAVS) and carpal tunnel syndrome (CTS). The aim is to investigate whether the incidence of HAVS or CTS in 8 European countries (Belgium, Czech Republic, Finland, France, Italy, NL, Spain, UK) has changed following the implementation of the directive.

Methods: Time trends in cases of HAVS and CTS reported to surveillance and compensation schemes in each country will be analysed. *A priori* estimates of the expected impact of the directive will be made. These will be based on the assumption that there would first be an increase in case ascertainment following increased surveillance and publicity, followed by a decrease in incidence. Time periods representing before and after the implementation of the directive will be defined objectively and prospective to the analysis for each country. Continuous time trends will be estimated using a negative binomial regression model. The same model will be used to make before and after comparisons and, if appropriate, an interrupted time series design will be used.

Results: During 2005 to 2006 all the countries implemented the directive and the 5 m/s² exposure limit except the Czech Republic who retained their existing exposure limit of 1.5 m/s². No other countries had an exposure limit prior to the directive. The analysis will be completed before the meeting.

Conclusion: This will be the first time this approach to evaluating interventions has been applied simultaneously to several countries.

Session VII: "Systematic reviews on etiology of occupational diseases"

Session Date: 16/10/2014

Presentation Time: 14.00 - 14.35

Occupational Exposure to Polycyclic Aromatic Hydrocarbons and larynx cancer – a systematic review

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Abstract

Objectives: Polycyclic aromatic hydrocarbons (PAH) form during incomplete combustion. An increased risk of lung cancer caused by occupational exposure to PAH has been shown in numerous epidemiological studies, e.g., in the coke-making industry, during the production of generator gas and aluminum, and among road pavers, roofers, and chimney sweeps. In 2009, "lung cancer caused by polycyclic aromatic hydrocarbons if there is evidence of exposure to a cumulative dose of at least 100 benzo[a]pyrene-years [(microgramm/m³) x Years]" became occupational disease No. 4113 in the list of German occupational diseases. This systematic review provides needed scientific clarification regarding the association between occupational PAH exposure and larynx cancer

Methods: A search of Medline and Embase with a search string including terms regarding PAH exposure as well as PAH exposed occupations and an extensive hand-search of reference lists was used to collect relevant articles through the beginning of 2011. Title and abstract screening and assessment of the full-texts for inclusion criteria and study quality through two independent reviewers followed. Random-effects meta-analysis of the extracted effect sizes were conducted with STATA.

Results: Titles and abstracts from a total of 2.788 literature records were screened and 149 articles met the inclusion criteria. After exclusion of further studies during the full-text screening, a total of 88 articles (21 with satisfactory (+), 67 with poor quality (-)) were included in the qualitative synthesis. Due to several publications with overlapping study populations, the subsequent meta-analysis was conducted with the extracted results of 62 articles. Of these articles, 16 were judged to have a satisfactory (+) and 46 a poor (-) quality score. The meta-analysis resulted in a pooled effect size of 1.41 (95 % CI 1.30-1.53) for larynx carcinoma and occupational PAH exposure. The study quality had no substantial effect on the pooled effect sizes. Only very few studies allowed an investigation of the dose-response relationship; these studies give indications of a positive dose-response effect.

Conclusions: The results of this present systematic review with meta-analysis show a robust relationship between occupational PAH exposure and the diagnosis with larynx carcinoma.

Session VIII: "Effective occupational health surveillance II"

Session Date: 16/10/2014

Presentation Time: 14.35 - 15.05

Should we perform focussed health surveillance instead of general occupational medical examinations?

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Abstract

Objectives: In occupational medicine, we aim to prevent and detect work-related diseases (WRD). Occupational health surveillance is a frequently applied method. However, due to its broad scope, it might lack the necessary sensitivity to detect WRD. In this project, our objective was to assess the differences in detecting dermatological problems using a general and a more focussed approach.

Methods: The study was carried out in 7 companies (health care sector), 376 employees underwent in 2012 a standard periodical examination and in 2013 a dermatological health assessment, which consisted of a short questionnaire, clinical examination and hand rinse test. Similarity in distribution of the dermatological symptoms was tested with the McNemar Test.

Results: The following symptoms were observed in both years: Acnea; Eczema; Chapped skin; Skin mycose; Skin naevus; Nail problems; Skin infection; Pruritus; Psoriasis; Urticaria; Verrucae; Other skin problems. In 2012, one or more symptoms were detected in 8,5%, in 2013 in 29,3%. For all symptoms, the prevalence in 2013 is notably higher. For Acnea, Shapped skin, Nail problems, Pruritus, Psoriasis, Verrucae and Other skin problems, the result of the McNemar test was significant.

Conclusions: Dermatological symptoms are frequently reported among employees and often worsened by occupational exposures (in a study among 50 000 employees in Germany, dermatological findings needing treatment were observed in 19% of the study cohort (1)). Our results reveal that general occupational health surveillance significantly underestimates skin related problems. Problem oriented medical examinations give the occupational physician the opportunity to focus on a selected health indicator.

Session VIII: "Effective occupational health surveillance II"

Session Date: 16/10/2014

Presentation Time: 14.35 - 15.05

Health literacy among company employees and its association with lifestyle and metabolic syndrome

Hiroshi Fukuda¹

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Abstract

Objective: Health literacy (HL), which is defined as "the ability to access, understand, and use information for health" (Nutbeam, 1998), has gained attention as a strategy to reduce health disparities. HL is expected to be utilized likewise in the workplace, but not enough empirical research has been conducted in Japanese workplace. To examine how HL among company employees is associated with lifestyle habits and metabolic syndrome (MetS).

Methods: A cross-sectional study was performed by giving self-administered surveys to 390 employees working at a household chemicals manufacturer in Tokyo who had undergone a periodical health check-up in 2012. Five questions from an HL scale for workers (Ishikawa et al., 2008) were used.

Results: Valid response rate was 99.2%, male 72%, and the average age was 40.9 years. Hypertension, dyslipidemia, and diabetes were observed in 18.6%, 28.9%, and 6.5% of subjects. Thus, 22.6% met criteria for MetS or pre-MetS. On the HL scales, scores for "gathering information" were highest, with 93% of employees answering at least "agree". This was higher than percentages for "selecting information", "judging information", "sharing information", and "personal decision-making". We found some differences between the high (39%) and low HL group (61%) groups regarding several lifestyles, such as concerning about nutrient balance, eating breakfast, vegetables intake, intake of a soft drinks, exercise habit, smoking habit. In the high HL group, the prevalence of MetS and diabetes were low.

Discussion: Employees had good overall HL, which indicates that this company is showing adequate results of already practicing the substantial workplace health promotion. Similar to previous study, we could show the positive relation between employees HL and lifestyle or MetS. As health disparities continue to grow in Japan, improving the health literacy of employees throughout their lifespan will be an important outcome for initiatives to ensure the health of workers.

Session X: "Effective education and training in occupational health"

Session Date: 16/10/2014

Presentation Time: 16.10 - 17.15

The teaching of specialty occupational medicine in medical school of São Paulo University, Brazil

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Abstract

Introduction: Occupational Medicine was recognized as a medical specialty in Brazil in 2002. The process of formation of the specialist at the School of Medicine at University of São Paulo includes Medical Residence (MR), with service training for two years with 5760 hours, and Specialization Courses (SC) with 1920 hours.

Objective: To analyze the characteristics of teaching Occupational Medicine at the Faculty regarding the competence of the occupational doctor's.

Method: Descriptive study based on literature review of institutional texts and articles and analysis of documents filed by the Department of Forensic Medicine, Medical Ethics, Medicine and Social Work and interviews with participants.

Results: From 2004 to 2013, 12 doctors concluded the MR and 340 the SC. These professionals are working throughout Brazil. During the MR, doctors performed practical activities in the services of the hospital-school from Faculty and internships in private companies, labor unions and government agencies. Doctors of the SC perform practical activities in the company that they work under the supervision of teachers. The theoretical-practical activities include 560 hours of classes and weekly scientific meetings. The skills required for professional were: risk assessment, individual and collective actions in health workers, the development and implementation of policies for managing workplace health. Among the difficulties in training in occupational medicine by MR is the low income level of residents.

Conclusion: It is important to discuss the skills and to exchange teaching's experience in occupational medicine respecting the characteristics of each country.

Session X: "Effective education and training in occupational health"

Session Date: 16/10/2014

Presentation Time: 16.10 - 17.15

Using paper cases versus real patients in teaching occupational health : students' perceptions and performance

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Abstract

Objective: To investigate the impact of three different training formats in occupational health on perceptions and performance of undergraduate medical students.

Methods: A comparative study which included all fourth-year students was conducted over a three years period. The year group in 2010 (211 students) received paper case studies followed by one small group session. The format used in 2011 actively engaged 188 students in the learning process by adding collaborative work and group discussions to the written information. In 2012 the approach comprised no longer constructed text cases but 212 students encountered real patients. Students' perceptions were obtained by questionnaire. Their learning performance was assessed through review of written reports and score on oral presentations. Statistical differences in ratings were analyzed using Fisher's exact and Kruskal-Wallis tests.

Results: All three formats were found to equally achieve the stated learning objectives. The year groups with incorporation of active learning strategies and patient contacts had significant better test performance compared to those receiving only written case studies. Real patient students gave statistically significant higher rates for relevance, authenticity and appropriate difficulty level of the training than did students who discussed written case studies.

Conclusion: Both approaches with augmented interaction in 2011 and 2012, improved performance and satisfaction among students. However, students valued the use of real patients higher than paper-form cases.

Session X: "Effective education and training in occupational health"

Session Date: 16/10/2014

Presentation Time: 16.10 - 17.15

The SCIN (Skin Care Intervention in Nurses) Trial-a cluster randomised trial

I. Madan¹, V. Parsons², B. Cookson³, J. English⁴, T. Lavender⁵, P. McCrone², C. Murphy², G. Ntani⁶, L. Rushton⁷, J. Smedley⁸, H. Williams⁹, A. Wright², D. Coggon⁶.

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Abstract

Background: Irritant hand dermatitis is a major risk in healthcare. The high prevalence in nurses is attributed to frequent hand washing with soap and infrequent use of hand moisturisers

Objectives: To test the hypothesis that a bespoke, web-based behavioural change programme (BCP) coupled with provision of hand moisturisers, can produce a clinically useful reduction in the prevalence of hand dermatitis after one year, when compared to standard care, in at-risk nurses.

Methods: 37 hospitals have been recruited as participating sites. Hospitals will be the unit of randomisation. There will be two groups of participants per hospital: a) student nurses (n>40/trust) who are about to start their first clinical placements, and who are at increased risk of hand dermatitis because of a past history of atopic disease or hand dermatitis; b) nurses working in intensive care units (n>40/trust) who are at increased risk of hand dermatitis because of the nature of their work. The intervention will centre on the BCP, which will include information on: when and when not to use gloves, antibacterial hand gels and moisturising cream. Participants will be asked to form implementation intentions for performing each behaviour and will be reminded of their implementation intentions throughout the study period. Facilities will be provided to encourage adherence, including personal supplies of moisturising cream for student nurses, and provision of optimal equipment for washing hands together with moisturising cream dispensers on the wards for intensive care nurses.

Outcomes (changes from baseline to 12 month follow up in intervention and control hospitals)

Primary:

- point prevalence of hand dermatitis as determined by questionnaire and blinded photographic assessment.

Secondary:

- estimated prevalence of hand colonisation by pathogenic bacteria
- reported hand care behaviour
- beliefs about dermatitis, and prevention behaviours.

We will assess the cost-effectiveness of the intervention compared with normal care.

Session IX: "Poster discussion on-site"

Session Date: 16/10/2014

Presentation Time: 15.05 - 16.10

P1. The prevalence of sick building syndrome of official workers in Burapha University, Thailand

Luksanaporn Krungkraipetch¹, Kitti Krungkraipetch¹

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Abstract

Objective: To find the prevalence of SBS among the workers in Burapha University

Materials and Methods: The data of 505 samples were collected by questionnaires for identification of SBS in 2010-2011. The data was analyzed by frequency, percentage, mean and sd.

Results: A mean of age, working experience years, working days/week and working hours/day were 35.38 ± 0.40 , 7.8, 5.29 and 6.5 respectively. Most offices were designed as the single room without partitions and carpet. Most of furniture was made of wood and the walls were painted with soft color. The average workers in each room were 7. The hygiene degree within room was moderate. The office equipment & supplies were PC, typewriter and air conditioner. A half of workers felt low air flow in the office, but the other felt appropriate. Most of them did not feel uncomfortable during work time. About 2/3 of them had a concurrent illness which the common symptoms were unilateral headache, dust/pollen/fur allergy, unspecified dermatitis, sinusitis and asthma respectively. Most of workers were non-smoker. The common symptoms of SBS among them were general symptoms which confined to the musculoskeletal, upper respiratory, eye, skin, lower respiratory and infectious symptoms, respectively. According to the criteria for SBS diagnosis, the prevalence among them was 14.5%, but if exclusion of ill-health persons, the prevalence was only 3.2%

Conclusions: The prevalence of SBS among office workers in Burapha University was 3.2%. It might quote that indoor air quality of the offices in the University had no problem which might be explained from the administration of environment under ISO 14001 guideline in many sectors of Burapha University.

P2. Occupational noise risk assessment in a group of hospital workers

Teresa Mariana Faria Pinto¹, Emídio Manuel Filipe da Fonseca e Silva¹, Joaquim Pedro Pereira Silva Vieira², Fernando Jorge Almeida Mautempo Coelho¹

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Abstract

Objectives: Noise at work raises an important health concern since occupational exposure is responsible not only for noise-induced hearing loss but also for reduced job performance and well-being. We investigate the impact of noise on the workers of the financial department of a Portuguese hospital unit, which physically confronts the loudly hospital's medical gases central.

Methods: Occupational noise was measured by an external accredited company at three different workstations of the department, according to the Portuguese legislation applied. All workers were proposed to an ENT evaluation, including an audiometric exam, to investigate the presence of hearing loss and signs of acoustic trauma. Finally, we explored workers' subjective perception of noise and also its consequences on self-performance using a psychometric Likert scale.

Results: Eleven of the twelve workers of the department agreed to engage the study and completed the evaluation. According to WHO criteria, five workers showed some degree of hearing loss. However, when corrected for the age of the worker, only one had significant hearing trouble. The pattern of loss found was compatible with a noise-induced lesion and it was not detected any other factor on medical history or on physical examination that could explain the impairment. Occupational noise determination did not reveal exposure to sound levels above the admissible limits, so we could not justify this loss with job-related issues. However, eight workers considered to have excessive noise at work and ten of them believed it was interfering with their global performance.

Conclusions: Noise is ubiquitous in all activity sectors but its effects are still incompletely valorised. In this way, it is critical to create news tools to address and tackle all kinds of damaging occupational sound exposure in order to prevent noise-related morbidity and improve work performance.

P3. Psychosocial and organizational risk factors for doctor certified sick leave among female health and social workers in Norway: The role of violence.

Aagestad C.

Abstract

Background: Doctor- certified sick leave is prevalent in the health and social care sector. This study examines the impact of several work environment factors on doctor certified long- term sick leave.

Methods: A randomly drawn population sample of Norwegian residents was interviewed about working conditions in 2009 (N= 12,255, response rate 60.9%). Female health and social care workers (N= 925) were followed in a national registry for subsequent sickness absence during 2010. The outcome of interest was doctor certified sick leave of 21 days or more (Long- term sickness absence, LTSL). Twelve work- related psychosocial and organizational factors were evaluated.

Results: In total, 186 persons (20.2 %) were classified with subsequent LTSL. After thoroughly adjustments for competing explanatory variables, the most consistent predictor for LTSL were violence and threats of violence (OR=1.67; 95% CI 1.14-2.25). The estimated population attributable risk for violence and threats of violence was 13%.

Conclusions: The present study among female health and social care workers revealed a substantial relationship between self-reported violence and threats of violence and subsequent LTSL.

P4. Evaluation of occupational accidents among workers of an oncological hospital in São Paulo, Brazil

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²Medical School of São Paulo University. Department of Forensic Medicine, Medical Ethics, Occupational and Social Medicine, São Paulo-Brazil

Abstract

Objective: To evaluate the profile of occupational accidents occurred among workers of an oncology hospital in São Paulo in 2013 aiming to define a policy of adequate training.

Methods: A descriptive, retrospective study analyzing the accidents recorded in Specialized Service in Safety Engineering and Medicine (SESMT) in a hospital with 3,300 employees, of which 2359 (71.5%) were women and 941 (28.5%) were men.

Results: The policy of the Service is to record and investigate all accidents regardless of the time of removal. In 2013, occurred 203 accidents involving 189 workers, representing 57.2 accidents per 1000 workers. Between accidents recorded, 83 (40.8%) were typical without the presence of biological hazards, determining a total of 305 lost days of work; 57 (28.0%) accidents involved biological hazards without incapacity and 63 (31.2%) commuting accidents with 413 days lost from work. Evaluating sectors: accidents without biological hazard predominated in the wards and biological risk in the operating room. The working time of employees in the hospital concentrated up to 4 years of service. Accidents with biological risk predominated during the performance of procedures and without biological risk associated to falls in wetting floor and cutting injuries during opening ampoules.

Conclusion: The analysis revealed a high incidence of typical accidents in workers with little time in this hospital, justifying improving the policy of prevention training. At the same time, the high rate of accidents on the way home-work shows the need for action in the guidelines for risk factors outside the work environment in order to prevent damage to the employee because there were accidents with greater severity (considering the lost day work).

P5. The prevalence of MRSA colonization in hospital staff and risk factor analysis: a pilot study

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Abstract

Objectives: Health care workers are at increased risk for colonization and infection of methicillin-resistant *Staphylococcus aureus* (MRSA). The main aim of this pilot study is to investigate the prevalence of colonization by MRSA in employees of a hospital and to identify the work-related and non-work-related factors associated with such a colonization.

Methods: This survey, designed as a monocentric, open, cross-sectional epidemiological study includes all employees aged 18 to 65 years of the Dresden Heart Centre. MRSA colonization will be screened by means of swab samples taken from the anterior nares. All samples will be sent to a laboratory for analysis and genotyping. Additionally all employees take part in a written questionnaire to evaluate potential risk factors for colonization with MRSA. The questionnaire also focusses on the identification of possible effect modifiers. First, all collected data will be analysed descriptively. We will compare the prevalence of MRSA colonisation between employees with contact to patients (n= 125, divided according to their fields of activity) and those without (n=125). Including the questionnaire survey results we will also estimate adjusted (e.g. for age and gender) respectively stratified prevalence ratios (PR). All statistical analysis will be performed using statistical programmes (SPSS 21 and SAS). A complete anonymised data set ensures a comprehensive data protection.

Results and Conclusions: The conceptual basics for understanding the chains of infection in consideration of possible influencing factors will be provided by this feasibility study. Therefore important foundations for further extended occupational epidemiology studies about activity-based risks for MRSA colonisation in the health care system can be made. Furthermore the results of this investigation will help to define new target-group-specific prevention measures.

P6. Effect of a laparoscopic instrument with rotatable handle piece on biomechanical stress

Benjamin Steinhilber¹, Robert Seibt¹, Florian Reiff¹, Anne-Kathrin Stoffels¹, Monika A. Rieger¹, Ralf Rothmund²

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²University Hospital Tuebingen, Department of Gynecological and Obstetrics, Tuebingen Germany

Abstract

Objectives: Physical stress induced by laparoscopic surgery (LS) is associated with work-related upper limb musculoskeletal disorders in surgeons. Therefore this study investigates the effect of a laparoscopic instrument with a rotatable handle piece (rotatable-li) on biomechanical stress and precision. Further a possible interaction between the use of the instrument and the working height (WH) was evaluated.

Methods: 57 healthy subjects (30 women; 27 men, median age: 26) without experience in LS were observed while performing a laparoscopic exercise where colored pins had to be grabbed and placed down to a target tray. The exercise was carried out at two WHs using the rotatable-Li and a standard laparoscopic (fixed handle piece) in randomized sequence. Biomechanical stress was monitored via surface electromyography (sEMG) at the shoulder (M. trapezius and deltoideus) and dominant arm (M. Biceps brachii, extensor digitorum, flexor carpi radialis). Further the wrist palmar/dorsi flexion and the posture of the upper dominant arm were recorded. Precision was assessed by the number of validly placed pins and process time.

Results: sEMG parameters indicated no differences in muscular stress according to the two laparoscopic instruments. The upper WH increased muscular stress at the trapezius and deltoideus muscles ($p < 0.05$). Neutral wrist postures were more frequent utilizing the rotatable-li. A slightly higher amount of neutral wrist postures was occurred at the lower WH. Precision was unaffected by the two instruments and both WHs.

Conclusions: The rotatable-li seems not to decrease muscular stress but wrist angle position may be optimized without affecting precision. Long-term effects of the rotatable-li on preventing complaints of the upper extremity should be evaluated. A low WH can reduce muscular stress in the shoulder and should be considered when placing the patient. An upcoming field study observing surgeons will clarify whether these results can be confirmed in a realistic setting.

P7. Work ability score in solvent-exposed workers

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Abstract

Objectives: Early detection of adverse exposure-related health effects prevents occupational diseases. Proactive approach in screening is justified. However, detailed knowledge on impact of solvents on experience of work ability is scarce. Work Ability Score (WAS) is a single question item, part of Work Ability Index (WAI), easily included in screening questionnaires for occupational health services (OHS) and primary health care.

Methods: Questionnaire on exposure and health was sent to 3,640 workers in solvent-exposed trades, resulting in 1,730 responses. Current work ability compared with the lifetime best (WAS), common demographic factors, chronic diseases, employment status, occupation, and exposure to solvents were considered in univariable and multivariable analysis.

Results: Duration of exposure to solvents and cumulative intensity of exposure were associated in experienced decreased work ability, size of effect comparable to that of alcohol use, but effect lesser than that of previously known adverse factors. Number of chronic diseases, psychiatric and musculoskeletal conditions, age, and current employment status were clearly associated with low WAS.

Conclusions: Screening at early stage enables occupational rehabilitation or measures to decrease exposure, and can prevent occupational disease. Exposure to solvents is not only a risk of chronic solvent encephalopathy, but current results suggest affected work ability in general in solvent exposed trades.

P8. Surveillance for job-relevant health complaints among construction workers

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Abstract

Background: Workers' health surveillance (WHS) is a strategy to signal job-relevant health complaints in an early stage and prevent workers from a further deterioration. A new job-specific WHS was offered to bricklayers and construction supervisors. In this controlled trial we compared job-specific WHS (intervention) and generic WHS (control group) on preventive physician- and worker outcomes.

Methods: A total of 198 construction workers participated: 77 in the intervention group and 121 in the control group. Information on job-relevant health complaints of the musculoskeletal system, sight, hearing, psychological complaints, skin problems and lung or airway symptoms were gathered by self-report or medical examination. Feedback from the OP to the worker was provided individually. Protocolized advices from OP and the consecutive preventive actions of workers were sampled after three months. A generalized linear (mixed) model was used to compare both groups on OP advices and worker actions.

Results: High prevalences of job-relevant health complaints were found in the intervention group, the most prevalent being hearing problems (63%), musculoskeletal pain (54%), psychological complaints (33%), and lung symptoms (27%). A job-specific WHS resulted, compared to a general WHS, in more workers getting job-specific health advice from the OP (77% (57/77) versus 33% in the control group (40/121), $p=0.00$). Compared to the control group, in the intervention group more recommendations were given on musculoskeletal symptoms (39% versus 17%), hearing (51% versus 12%), mental health (10% versus 2%), skin (16% versus 2%) and lungs and airways (16% versus 0%). In both groups a high percentage of workers undertook a job-specific preventive action. Differences between groups were not statistically significant (73% (40/55) versus 59% in the control group (71/121), $p=0.09$).

Conclusions: Job-specific prevention through WHS is a promising strategy for both OP and worker. In both the control and intervention group, a high percentage of workers undertook preventive actions.

P9. Development of a new tool: The Scoring Method for Assessment of Repetitive Tasks

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Abstract

The paper describes development of a new tool, a scoring method for numerical assessment of manual tasks with high repetition, occasional force exertion and awkward body postures. The method is developed and aimed at surveillance of work-related diseases, and can also be applied in detection of occupational health risks causing occupational musculoskeletal diseases. The tool was designed on the basis of a comprehensive and critical review of the literature and follow-up evaluations of own studies. It includes an objective description of tasks, repetition, force and body posture with numerical quantification of mentioned activities together with their interaction. Demands of work (e.g. repetition, force exertion etc.) are presented with scores, each in individual scale. The scales correspond to the conditions encountered in practice. The classification of these scales and final numerical quantification gives an indication of overload and of load bottlenecks. Total numerical score is obtained by multiplying the scale value for the daily duration by the sum of the other scale values. End result is a total score, with numerical value, describing the risk of physical overload. Numerical value is explained in explanatory table which contains four ranges of numerical values, also coloured in: green, yellow, orange and red accordingly with the level of risk. The method is Scoring Method for Assessment of Repetitive Tasks (SMART). Until now, the draft method was tested at 56 workplaces on a sample of 112 workers. Approximately 23 % of the activities were in the "green" zone and 36 % in the "red" zone, with 19 % in yellow and 22% in orange zone, meaning that 77% of subjects experience increased physical load (combined yellow, orange and red zone scores). The draft is now in the process of field testing and scientific evaluation.

P10. Return to work Program among hospital workers in São Paulo, Brazil: evaluation of results and efficiency

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Abstract

Objective: To evaluate the Program to Return to Work after incapacity by health problem among workers at a hospital in São Paulo, Brazil, indicating the efficiency and difficulties in its implementation.

Methods: Case study conducted between January 2011 and December 2012 at a hospital with 18,000 employees. Absences more than 15 days were analyzed. The difficulties were verified by interviews with the professionals involved.

Results: The Program is developed by: occupational medicine, social work, psychology and safety engineering. The aim is to promote the reintegration of the worker, taking into account his health complaint and the context of disability and monitoring their return. In the study period occurred 65,906 absences of work. Of these, 63,960 less than 15 days license (951 by accident and occupational disease and 63,009 from disease "common"); 1,946 greater than 15 days license (382 for accidents and occupational diseases and 1,541 for common diseases). Regarding return to work after longer absences (more than 15 days): 48.5% returned without restriction, 37.5% were included in the Program and 13.6% returned to Social Security. The majority of the population consisted of women with function of nursing. The most frequent diseases were musculoskeletal, followed by mental illness. The difficulties were: conflicts between managers and employees arising from social representations of the image of sacrifice; accompanied by not clearly defined responsibilities; the employer and employee resistance to accept the return in gradual regime; no interventions in occupational risks during absences; "low" culture of prevention risks at work in hospitals.

Conclusion: The Program is partially successful due to the complexity of the return to work process mainly in hospitals. Currently tools are being developed to improve the assessment of work ability and analyses of activity.

P11. Interventions to support return-to-work for patients with coronary heart disease – Protocol of a Cochrane Review

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Abstract

Objective: Coronary heart disease (CHD) is the most important cause of mortality and morbidity in Western industrialized countries. Important predictors of return- to- work (RTW) of patients with CHD appear to be cardiac factors on admission to hospital, recurrent cardiac events, and depression scores during hospitalization. Several Cochrane reviews have already assessed the effect of cardiac rehabilitation on morbidity and mortality, but none of these reviews have specifically assessed the effects on RTW. This Cochrane systematic review aims to assess the effectiveness of interventions directed at patients with coronary heart disease or their working environment, or combinations of the two, to enhance RTW.

Methods: We conduct a systematic literature search to identify all published and unpublished trials eligible for inclusion. All randomized controlled trials (RCTs) including cluster RCTs, quasi-RCTs and controlled before-after studies are included. We consider studies on adults who have been diagnosed with CHD, who have experienced a myocardial infarction or a coronary revascularization procedure like coronary artery bypass grafting, percutaneous transluminal coronary angioplasty or stenting, patients with angina pectoris or angiographically defined CHD. We include all work-directed interventions, person-directed interventions (physical conditioning interventions and psychological interventions) and any combination of them. Pharmacological treatments are excluded. The primary outcome is RTW, including return to either full- or part-time employment, to the previous job, and to the same role or with changes in work status.

Results: First our title has been accepted by the Cochrane Review Group, the protocol was developed and submitted afterwards. The Peer-review comments were processed and after resubmission the protocol is now published in the Cochrane library. Currently, the selection of literature takes place.

Conclusion: The protocol describes the proposed approach how we intend to answer our research question. The protocol and first results of the literature search and selection will be presented.

P12. MoHaWK – Driving quality improvement in OH practice

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Abstract

Objective: Effective clinical governance that improves the quality of care for workers is important in both the public and private sectors. MoHaWK, the online OH benchmarking tool which supports local audit commenced in April 2012 to provide a systematic approach to demonstrate the quality of occupational healthcare and overall performance³ using benchmarking and periodic audit.

Method: An extensive literature review was undertaken that led to the formation of the evidence-based indicators that are the basis of the system and data from services is inputted every 6 months by occupational health services. The indicators cover a broad range of occupational health intervention including case management consultations and health surveillance. 5 'rounds of data' have been undertaken to date (Round 6 in November 2014). Developments in the system have been made to support local clinical audit via actions plans to aid services in reviewing the data, improving and raising standards of practice within their service.

Results: Participation from services is increasing in each round as well as a broader range of sectors. The results suggest that the system is contributing to services improving areas of practice. There is an upward trend in the % of services achieving the target standards, indicating that services are improving their performance in the evidence based indicators being measured. There is powerful testimonial evidence from services demonstrating how the system is impacting the quality of their service.

Conclusion: MoHaWK's aim is to drive clinical improvement against evidence -based standards. The results to date demonstrate that this is occurring but there are still areas of improvement needed for some services. MoHaWK is a low cost ,accessible system which has been shown to improve quality of practice in OH services.

P13. Practical abilities required of Japanese non-specialist occupational physicians and training programs aimed at improving their abilities

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Abstract

Introduction: In Japan, companies employing more than 50 workers at one site are required to hire an occupational physician (OP). OPs in Japan are generally classified into three main types according to the way they work. Type 1s comprise clinical doctors who work as OPs during their routines. Their opportunities for learning about occupational health are usually limited. They typically undergo a 50-hour basic course to qualify as OPs, and a 20-hour course every 5 years to renew their qualifications. Japan is currently facing a serious shortage of Type 2s, or specialist OPs, while no training programs are presently available for Type 3s, who supervise occupational activity in large corporations. Most companies in Japan are small or medium sized and staffed by Type 1s. Thus, improvements in training programs for OPs will greatly contribute to OP services in Japan. This study aimed to determine practical abilities that need to be prioritized in Type 1 OP training, the efficacy of training programs, and areas requiring further improvement.

Methods: To ascertain the practical abilities most required of Type 1 OPs, we conducted a questionnaire survey of OPs, occupational nurses, and health supervisors. In addition, we developed a training program for Type 1s, and evaluated its effects.

Results: Scores across all participant groups exceeded 4.1. Although no component of the training program was considered "unnecessary," several were noted as making a great difference.

Conclusion: The efficacy of our training program was confirmed to some extent. We suggested three criteria for prioritizing the practical abilities required of Type 1 OPs in their training. We concluded that not only was it important to develop training programs for Type 1 OPs, but that systems allowing them to improve their abilities in a limited amount of time were necessary.

P14. EASOM. The professional organisation for schools of Occupational Medicine in Europe

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Abstract

Objectives: EASOM was founded in 1993 as a professional organisation for teachers of occupational medicine in Europe. Since then, a number of initiatives have been set in motion to promote a debate on the competencies that every doctor should have in Occupational Health (OH) and the definition of a core curriculum for teaching in Occupational Medicine (OM) in Europe. In this contribution, we aim to summarize all these initiatives, analyse EASOM's achievements in its 20-year history, and then identify the challenges still facing us.

Methods: Search, compilation and analyses of all the activities developed by EASOM since 1993 (scientific papers, position papers, teaching modules, Summer Schools and courses); also of participants from a number of European countries. Search of data on the situation of occupational medicine teaching in different European countries when EASOM was founded and now twenty years later. Review and evaluation of all the data collected.

Results: Throughout the last 20 years, EASOM has developed a great number of activities and it has also been successful in convincing countries all over Europe to share EASOM's commitment to its mission and to join the association. However, studies carried out by EASOM members have shown that the teaching of OM at undergraduate level to enable future doctors to develop the skills and competences critical for their professional development remains a challenge in many European countries. Furthermore, despite EASOM's efforts and despite the common European regulations and the free movement of workers across the European Union, harmonization of undergraduate and post graduate/specialist level teaching of occupational medicine is a goal that has yet to be achieved.

Conclusions: In spite of the goals achieved and the efforts made, there is much to be done in the field of teaching Occupational Medicine both at the undergraduate and specialist training level.

P15. Protective gloves: solving problems through education and training

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Abstract

Objective: Protective gloves are important part of personal protective equipment (PPE). The interviews with workers during obligatory periodic health examinations indicated problems in glove shortage, suitability and lack of information regarding safety at work. The objective was to discover problems of selection, procurement and usage of protective gloves in depth and find a suitable solution.

Methods: Survey was conducted in the sample population of safety experts who attended an educational seminar on protective gloves. They filled a questionnaire immediately before and after the seminar, and six months after the seminar.

Results: Results of the study discovered three major problems: one is procurement of protective gloves solely by the lowest price regardless of their quality and suitability, second is lack of proper, more focused training of safety experts about selection of protective gloves, and the third is poor training of workers on their obligations due to usage and maintenance of gloves and other parts of PPE. Although 67,5% of safety experts said that gloves are procured in accordance with risk assessment, 60,37% stated the main problem is still the price range because it is a limitation factor in proper selection of gloves. Survey has also shown that in practice if safety experts and workers are well educated in the field of PPE, than the safety is complied with and workers' health is preserved and that the employers' attitude towards safety can be more easily changed.

Conclusion: Future efforts must be directed towards education of employers, safety experts and workers on occupational safety and health. Changing the attitude of employers, safety experts and workers towards better safety climate in company is only possible by providing knowledge. This field is still insufficiently explored so the future steps should generate better educational tools in the area of PPE, specially designed for different target groups.

P16. Undergraduate teaching of occupational medicine in two schools of medicine in São Paulo, Brazil

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Abstract

Objective: To analyze the teaching of occupational medicine during the graduation's period of two medical schools in São Paulo, Brazil.

Method: Case study, evaluating the number of hours, teaching methodology, themes, relationship pupil / teacher and teacher training.

Results: In both schools the undergraduate teaching of occupational medicine is compulsory for all students. In one school, the discipline is taught in the sixth semester during 36 hours including 180 students. In the lectures and workshops there are 45 students and at practical activities 15 students (4 hours to visit a workplace). In the other school, the classes and visits to companies are in the fifth semester, involving 100 students with 50 students per teacher. This school is trying to have more dynamic teaching classes including cross-cutting themes that are taught with other disciplines in the eighth semester (for example, writing medico-legal reports are taught by occupational health with the discipline of forensic medicine and pathology). Moreover, in the sixth year of the School there is supervised practice teaching including one teacher for 5 students during 8 hours. That activity has good student assessment. The topics covered in the two Colleges are: skills of specialists in occupational medicine and its relation to general practitioners; law and actions related to the occupational health institutions; occupational history; evaluation of the work environment and occupational hazards; occupational diseases (respiratory, musculoskeletal, poisoning by chemicals, mental disorders, lost hearing), biological hazards and consequences related of working with humans health.

Conclusion: Time devoted to occupational medicine during graduation is small, being hard for the students to understand that the discipline includes more than the administrative action. In our experience the adoption of interdisciplinary and practical activities generate the perception of the relationship of occupational medicine with the performance of the generalist doctors and other medical specialties.