Pesticides and other agrochemical were found to be within reach of farmers who get their supplies from agrochemical dealers at their farms and homes. Farmers who apply pesticides in mixtures were of the view that tank mixing was favourable because it saves time, labour and cost since more than one pesticide could be applied in a single supply. Farmers generally were aware of the potential adverse impacts of pesticide deposition on the environment but didn't know it have adverse health effect on human. Most farmers stored agrochemicals in multipurpose storage structures together.

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THE ASSOCIATION BETWEEN NIGHT SHIFT WORK AND CARDIOVASCULAR AND ENDOCRINE DISEASES IN HEALTHCARE WORKERS IN BULGARIA

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Introduction The prevalence of shiftwork is especially high with hospital healthcare workers. A number of epidemiological studies have found an association between night shift work, and cardiovascular (CVD) and endocrine diseases, involving circadian, behavior and social characteristics.

Objectives The aim of the study was to investigate the association between night shift work and cardiovascular and endocrine diseases in hospital healthcare workers in Bulgaria and possible mediating factors.

Methods The study included 2690 healthcare workers with an average age of 48.0 ± 12.0 years and an average length of service 24.8 ± 12.7 years, from 19 hospitals with >150 beds in Sofia, Bulgaria. A self-administered questionnaire was used to gather information about demographic, physical and behavioral characteristics, previous and current work schedules, and the health status of healthcare workers.

Results The worker group with the highest prevalence with CVD was ex-night shift workers (35.3%), followed by night shift workers (24.4%) and the lowest with day workers (16.3%). The OR for developing a CVD for night workers was 1.98 (95% CI: 1.26–3.13); and endocrine diseases, 1.33 (95% CI: 0.83–2.12). The development of CVD was related to age, family history for hypertension and coronary heart disease, body mass index (BMI), heavy smoking and sleep disorders, while endocrine diseases with BMI, shift system, alcohol consumption and family history for diabetes.

Conclusion Data from our study strongly support the evidence for an increased risk and higher prevalence of cardiovascular and endocrine diseases in night shift workers. Actions for improvement of shiftwork organization and health promotion are needed for tackling CVD and endocrine diseases for a better health status of health care workers.

P-46

INDICATORS OF ABSENTEEISM DUE TO MENTAL ILLNESS IN THE JUDICIAL SECTOR: A DESCRIPTIVE APPROACH OF A RETROSPECTIVE COHORT

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Introduction Sickness absence is characterized by individual's withdrawal from work, for reasons of health and can be indicator of existing problems with the context work, in addition

to triggering consequences and damages for the worker and society. An analysis of sickness absence due to mental and behavioral disorders contributes to the dimensioning of the problem and to the search for factors related to work that are potentially stressful, in addition to favoring the identification of possible exposure scenarios for illness due to mental disorders, to which workers may have been submitted.

Objective To describe the indicators of sickness absence due to mental disorders of public servants in the judicial sector in Brazil in the period from 2011 to 2016.

Methods This is a retrospective cohort study on the casuistry of absenteeism. Workers who were on sick leave at the time of the study were excluded. The sociodemographic and occupational profile was observed, in addition to estimated epidemiological indicators (prevalences, cumulative incidence, prevalence ratios and risk ratios).

Results There was a total of 1023 events, with a greater number of episodes among servers with more than 10 years of service. The magnitude and occurrence of incident cases of absenteeism tended to decrease over the years, yet women were the most affected group, with prevalences higher than those of the men. Mood disorders, neurotic and stress-related disorders were the clinical diagnoses with the highest prevalences attributed to absenteeism.

Conclusion This approach and considerations are valid externally for the analysis of other services and pose challenges for the health services of the institutions, especially in the early detection of the risk of withdrawal and monitoring of working conditions.

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OCCUPATIONAL HAZARD EXPOSURES, SHIFTWORK AND PHYSICAL HEALTH OF FEMALE FACTORY WORKERS

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Objectives This study aimed to look into the association between occupational hazards and shift work with the frequency of occurrence of adverse physical health symptoms among 500 female factory workers in the Philippines.

Methods This is a meta-analysis of a database of a research study on female factory workers. Data on a wide range of socio-demographic, health and occupational characteristics were analyzed. The health data collected were the self-reported frequency of occurrence of various mental and physical health symptoms and injuries. Regressions were also used between factors affecting female worker's shiftwork and physical health.

Results Associations were observed between shift schedule, workload, sex, occupational risk, harassment, injuries, use of personal protective equipment, benefits, unions, employer-employee relations, and employee-employee relations, with the frequency of onset of physical health symptoms. The odds ratio for the association between shift schedule and occurrence of physical health symptoms was 1.82 (0.66–4.97; $p=0.39$) implying that female workers who worked in the evening were 1.82 times more likely to have frequent physical health symptoms. Having seminars on occupational health may modify the association between shift schedule and physical symptoms. In the final model, the ergonomic and occupational health factors that affected physical health were employee-employee relations, harassment, workload, and work benefits.

Among night shifters, those who perceived that they frequently had excess workload were 4.54 (1.03 – 20.00) times more likely to frequently experience physical symptoms.

Conclusion This study has shown that there is an association between specific occupation hazards and shiftwork with adverse physical health among Filipino female factory workers.

P-50 OCCUPATIONAL MOVEMENTS AND POSTURES OF THE NECK AS RISK FACTORS FOR CERVICAL DISC HERNIATION (CDH).

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Introduction Some observational and in vivo studies suggest dynamic neck movements and positions as causes of cervical disc disease. However, epidemiological evidence using objective measurements on neck position and movements as exposure is limited.

Objectives We studied the associations between objectively measured occupational neck movements and postures and CDH.

Methods We formed a cohort of 852,625 Danish workers who ever held at least one of 29 jobs (e.g. dentists, hairdressers, childcare, carpenters) from 1981 to 2016. Representative whole work-day inclinometric measurements using triaxial accelerometers measuring neck angular velocity and posture of the neck were used as exposure. Job titles were retrieved from the Danish Occupational Cohort with eXposure data (DOC*X) database. First diagnosis of CDH was retrieved from the Danish National Patient Register. The risk of CDH by quintiles of cumulated exposure was assessed by incidence rate ratios (IRR), adjusted for age, sex, calendar -year, previous lumbar disc herniation and education, using Poisson regression models.

Results We found 14,000 cases of CDH during 20.2 million person-years of follow-up. Crude analyses showed an increasing IRR of CDH with increasing angular velocity of the neck. However, in the fully adjusted model increasing levels of neck angular velocity showed a decreasing risk with IRR 0.90 [95% confidence interval (CI) 0.86–0.95] when the highest quintile (dynamic work) was compared to the lowest (static work). Similar results were found for extension and flexion of the neck. Multiple sensitivity analyses did not change the results.

Conclusion In this large register-based study, we found no evidence of an increased risk of CDH in jobs with high velocity of movements or extreme positions of the neck. Other factors than dynamic neck movements and bent neck position seem to be important in the development of CDH.

P-51 REPETITIVE AND FORCEFUL MOVEMENTS OF THE HAND AS PREDICTORS FOR PAIN IN THE DISTAL UPPER EXTREMITIES

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Introduction Some evidence exists of an association between measures of occupational use of hand force and repetition and

tendinitis of the wrist and epicondylitis of the elbow. However, these studies have often been limited by bias because of self-reported exposure and an outcome sensitive to time fluctuations.

Objectives To investigate occupational repetitive movements and the use of hand force as causes of distal upper extremities musculoskeletal disorders (D-UEMSD).

Methods A cohort of 202,735 workers in a private pension health scheme from 2005 to 2017 in one of 17 jobs (e.g. office work, carpentry, cleaning) was formed. Representative electro-goniometric measurements of wrist angular velocity as a measure for repetition and expert-rated use of hand force were used as exposures. Job titles were retrieved from the Danish Occupational Cohort with eXposure data (DOC*X) database. Outcome was first treatment for D-UEMSD. In a Poisson regression model, the incidence rate ratios (IRRs) of D-UEMSD were adjusted for age, calendar-year, diagnosis of rheumatoid arthritis and arm fractures. In further analyses, wrist velocity or hand force was added.

Results In men, wrist velocity had an IRR of 1.48 (95%CI 1.15–1.91) when the highest exposure level was compared to the lowest but with no clear exposure-response pattern. The effect became insignificant when adjusted for hand force. Hand force had an IRR of 2.65 (95%CI 2.13–3.29) for the highest vs. the lowest exposure with an exposure-response pattern, which remained after adjustment for wrist velocity. Among women, no increased risk was found for hand force, while wrist velocity showed a significantly protective association with D-UEMSD.

Conclusions In men, occupational exposure to hand force more than doubled the risk of seeking treatment for D-UEMSD. The results for exposure to repetition were less clear. In women, we could not find any indications of an increased risk neither for force nor repetition.

P-52 PROSPECTIVE ASSOCIATIONS OF MULTIPLE EXPOSURES TO PSYCHOSOCIAL WORK FACTORS WITH WELL-BEING AMONG EMPLOYEES IN FRANCE

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Objective Literature reviews showed adverse effects of high job demands, low job control, and low social support at work on well-being in working populations. Other psychosocial work factors (PWFs) remain understudied in association with well-being. We aimed to examine the prospective associations of a large variety of PWFs and other occupational exposures with poor well-being, as evaluated by the WHO-5 well-being index. An additional objective was to explore the effects of multiple occupational exposures on this outcome.

Methods The study sample consisted of 15776 employees aged 15–65 years (9181 women, 8579 men) included in the representative sample of the French national survey on working conditions and followed up from 2013 to 2016. Participants were classified as having poor well-being if they had a WHO-5 score below 13. Occupational exposures included 20 PWFs which were studied separately and then grouped into five dimensions (work demands, work organization and job content, interpersonal relations and leadership, work-individual interface, workplace violence), 4 factors related to working