Abstracts

HYPERTENSIVE DISORDERS OF PREGNANCY AMONG DANISH EMPLOYEES

Methods We included employees (n=8,968) who participated in the Danish Work Environment Cohort Study (DWECS), based on a representative sample of the Danish working population. Three dichotomous independent variables were created: MJH in general, combination MJH (i.e. second job as employee) and hybrid MJH (i.e. self-employed in second job). LTSA (≥5 weeks) was measured using the Danish Register for Evaluation of Marginalisation (DREAM) during 78 weeks of follow-up. Potential confounders included demographics, health, and work characteristics. Logistic regression analyses were performed to study whether LTSA was associated with MJH in general, combination MJH, and hybrid MJH. Interaction effects for gender, age, total working hours per week (≤37 or >37 hours a week) and shift work were tested.

Results In total, 11.7% (n=1,048) of the respondents reported having multiple jobs and 7.6% (n=678) experienced LTSA during follow-up. After adjustment for confounders, no significant association between LTSA and MJH in general (OR=0.82), combination MJH (OR=0.81), or hybrid MJH (OR=0.83) was found. Among employees working more than 37 hours per week, combination MJH was associated with a higher likelihood of LTSA (OR=1.50).

Conclusions We did not find evidence for an increased likelihood of LTSA among multiple job holders. Future research should study the likelihood of LTSA among subgroups of multiple job holders, e.g. those working long hours.

Oral Presentation

Shift Work

HYPERTENSIVE DISORDERS OF PREGNANCY AMONG NIGHT WORKERS IN DANISH HOSPITALS: A NATIONAL REGISTER-BASED COHORT STUDY

Objective Few studies investigated hypertensive disorders of pregnancy (HDP) in relation to work at night with inconclusive results and crude exposure assessment. Our aim is to investigate the risk of HDP after work at night during pregnancy based on objective exposure assessment from the Danish Working Hour Database (DWHD), which contains information on working hours from all public hospital employees in Denmark.

Methods The study population (n=20,385) comprised women from DWHD who have given birth at least once between 2007 and 2013. Night and day shifts were defined as at least three hours between 00:00 and 05:00 and between 06:00 and 20:00 respectively. Cases of HDP defined as gestational hypertension or preeclampsia/eclampsia were retrieved from the Danish National Patient Registry. We analysed the risk of HDP by number of night shifts during the first 20 weeks of gestation by logistic regression adjusted for relevant covariates.

Results The risk of HDP among women working 1–3 and >4 night shifts during the first 20 pregnancy weeks was OR=0.94 (95%CI 0.77, 1.16) and OR=1.03 (0.75, 1.41), respectively, compared to day workers. Stratified analyses revealed an increased risk of HDP among women older than 35 years who worked at night compared to day workers (OR=1.76; 1.05, 3.04 p value for interaction <0.001).

Conclusion Our results of no overall increased risk of HDP among night workers are reassuring. The post hoc result finding of increased risk among women older than 35 years needs cautious interpretation.

Invited Developing Countries

INVITED KEYNOTE: OBSTACLES TO CONDUCTING OCCUPATIONAL EPIDEMIOLOGICAL RESEARCH IN DEVELOPING COUNTRIES

The reasons advocated for conducting epidemiological studies in developing countries often include a need to improve the data base for prevention of ill health, including occupational diseases. Evidence based on research in developed countries may not be wholly relevant to developing countries because of differences in the environment, culture, health behaviour, health systems, and other factors. The obstacles to conducting occupational epidemiology studies in developing countries include: a) A lack of understanding of the purpose and nature of epidemiological studies. This often leads to potential study populations declining to participate.

b) Difficulty in defining homogenous study populations. This is especially true in developing countries with diverse national expatriate workers.

c) The absence of an infrastructure and support for conducting epidemiological research. Ethical committees meet infrequently. Statistical advice is difficult to obtain. Laboratories for analysis of environmental and/or biological samples are often not readily available.

d) Logistical difficulties include difficulty in contacting and recruiting study participants.

Organising teams of interviewers and research assistants can also be problematic: e) The nature of the research. A questionnaire may well have to be translated into several languages. There may be a reluctance by study participants to provide biological samples such as a venous blood sample. If environmental monitoring devices are to be placed in workplaces, this can be viewed with apprehension.
Despite these obstacles there are approaches to overcoming the hurdles identified, and increasing occupational epidemiology research in developing countries.

Oral Presentation
Policy/Impact

0209 CKDU: INTERVENTION TO POLICY * THIS IS PART OF THE MINI-SYMPOSIUM ORGANISED BY TORD KJELLSTROM

1,2Jason Giaser*, 3,4Kristina Jakobsson, 5ineke Wesseling, 6David Wegman, 7Becky Lucas, 8Theo Bodin, 4Ulf Ekstrom, 6Iliana Weiss. 1La Isla Network, International, USA; 2LSHTM, London, UK; 3Gothenburg University, Gothenburg, Sweden; 4Lund University, Lund, Sweden; 5Karolinska Institutet, Stockholm, Sweden; 6UMASS Lowell, Lowell, USA; 7Hamad University, Doha, Qatar; 8University of Birmingham, Birmingham, UK

Background In Mesoamerica CKDu (Chronic Kidney Disease of unknown cause) is epidemic among sugarcane workers and present in other workers. Excessive heat stress and workload are believed to contribute to onset and acceleration of CKDu. The Worker Health and Efficiency (WE) Program is the first evaluated intervention to address excessive heat stress and workload in sugarcane workers. We used the resulting press, political and industry attention to push for a wider agenda of worker protections.

Objectives • Evaluate impact of intervention on patterns of heat illness/dehydration, kidney function, physical workload and productivity.
• Demonstrate need for governments and industry to address CKDu and excessive heat stress in sugarcane- and other workers.

Methods The WE intervention was piloted in two cohorts of workers, one inland and one coastal sugarcane cutters (totaling 117 individuals); thus, allowing assessment of the intervention via self-controls. Concurrently, outreach to industries and governments was conducted to exchange information. Using press and myriad contacts, private and public policy began to rapidly change.

Results Pilot data analysis demonstrated a decrease in heat-related illness, improved hydration, and possibly a stabilisation in kidney function. Marked increase in productivity was also observed. The results drove policy discussions and measurable change in several companies, and the U.S. and Costa Rican Governments.

Conclusion An evidenced-based dialogue between sugar industry farmers, millers, buyers, and governments was created. There are several challenges that remain, and navigating the path to where we are holds valuable lessons for those doing similar work.

Oral Presentation
Reproductive Effects

0212 COMBINED EXPOSURE TO LIFTING AND PSYCHOSOCIAL STRAIN AT WORK AND ADVERSE PREGNANCY OUTCOMES - THE DANISH NATIONAL BIRTH COHORT

1Sebaek Camilla Sandal, 2Bay Hans, 3Larsen Ann Dyeborg, 4Kristensen Petter, 1,5Schülenssen Viv, 4Bonde Jens Peter, 6Juul Mette, 7Hougaard Kariin Seing, 1National Research Centre for the Working Environment, Copenhagen, Denmark; 1National Institute of Occupational Health, Oslo, Norway; 1Aarhus University, Aarhus, Denmark; 1Bispebjerg Hospital, Copenhagen, Denmark; 2University of Copenhagen, Copenhagen, Denmark; 4Bispebjerg Hospital, Copenhagen, Denmark; 5University of Copenhagen, Copenhagen, Denmark; 6UMASS Lowell, Lowell, USA

Lifting and high psychosocial strain at work has both been associated with adverse birth outcomes, but no studies have investigated the consequences for pregnancy, when they co-occur. Hence, we aimed to investigate the combined effect of lifting and psychosocial strain at work on pregnancy and foetal growth, using the Danish National Birth Cohort (children born 1996-2002). Women were included if pregnant with singletons at gestational age (GA) 22 and worked ≥30 hours/week (N=47,582). Work exposures were extracted from an interview at GA 16 (±3.0). We applied a continuous lifting variable from four questions about heavy and medium lifting, and a psychosocial strain variable, from two questions about demand and influence combined into the four categories of the Demand-Control Model. Pregnancy outcomes were available from the Danish Medical Birth Register. Preterm birth (week 22-36); term birth (week 37-44) but small for GA; term birth but large for GA; and term birth with normal weight (reference group). The overall adjusted multinomial logistic regression analysis showed significant interaction between lifting and job strain with respect to the four outcomes all together (p=0.007). Stratified analyses on the psychosocial exposure showed women in the high strain group had an increased risk of preterm birth (OR=1.04; 95%-CI 1.01-1.06) and having a child large for GA (OR=1.04; 95%-CI 1.01-1.06) for each additional 50 kg lifted. For women in the low strain, passive and active groups, lifting was not associated with the outcomes. Co-occurrence of high strain and lifting seems to increase the risk of adverse birth outcomes.

Oral Presentation
Other

0213 THE IMPACT OF THE NORWEGIAN COOPERATION AGREEMENT ON A MORE INCLUSIVE WORKING LIFE (IA AGREEMENT) ON SICKNESS ABSENCE AND DISABILITY PENSIONING

1Therese Nordberg Hanvold*, 2Karin Corteb, 1Rune Hoff, 1Petter Kristensen, 1Ingrid Sveinsd Mehlin. 1National Institute of Occupational Health, Oslo, Norway; 2Department of Biostatistics, University of Oslo, Oslo, Norway; 3Institute of Health and Society, University of Oslo, Oslo, Norway

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