Poster Presentation
Developing Countries

0010 EPIDEMIOLOGY OF ROAD CRASH AND ACCIDENT FATALITIES AMONG BUS AND TRUCK DRIVERS: VULNERABLE OCCUPATIONAL GROUP

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Aim This study looked at occupational road crashes among truck and bus drivers in comparison to other drivers and motorists on the road of Metro Manila which is one of the cities with a high traffic density. One of the most precarious and risky occupations is driving especially buses used for public transportation, and trucks for commercial activities.
Methods The study used meta-analysis of previous studies conducted, grey literature, government statistics, and validation through key database research in concerned national government agencies involved in road traffic from 2010–2015.
Results The study found that the in terms of the number of public utility vehicles registered in Metro Manila (2015), 51.27% were buses and 20.21% were trucks. Majority of the drivers worked more than 12 hours a day. In terms of time and peak of accidents, it is alarming to note that about 35% of the road crashes occurred from 22–23 gmt (2010–2015), and 30% from 23–24 (2010–2015) gmt. Human error accounted for the overwhelming cause of road crashes such as drunk driving, beating the red light, sleepiness, at 99.52% in 2012, 99.47% in 2013, 95.33% in 2014, and 97.19% in 2015.
Conclusion The study has shown how risky driving is as an occupation especially due to the work schedule. The study suggests developing better information, education and communication campaign and policies particularly on pedestrian safety, road safety, road-sharing concepts. Moreover, it is suggested that occupational health and safety among drivers as a special occupational group should be carried out.

Poster Presentation
Respiratory

0012 PULMONARY FUNCTION AND HIGH-RESOLUTION COMPUTED TOMOGRAPHY (HRCT) IN OFFSHORE OIL DRILLERS

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Purpose 1 to study short-term changes in pulmonary function in drill floor workers exposed to airborne contaminants from drilling fluids offshore compared to a reference group of non-exposed offshore workers; and 2 to detect possible signs of pulmonary disease by HRCT scans in previously exposed workers.
Methods In a follow-up study 51 drill floor workers and 55 referents were examined with measurements of pulmonary function at the heliport before and after 14 days of work.

Additionally 57 drill floor workers exposed to drilling fluids in the 1980's were examined in a cross sectional study with HRCT of the lungs.
Results Mean declines in forced vital capacity (FVC) and forced expiratory volume in 1 s (FEV_1) were 50 mL and 60 mL in the drill floor workers, respectively, and in the referents 60 mL and 70 mL. Average base-line examination time was 10:47 a.m., and re-examination time 14 days later was 15:05. After adjusting for possible diurnal changes in pulmonary function, the exposed workers still experienced a statistically significant decline in FEV_1 while the referents did not. Declines in FEV_1 and FVC among exposed workers were correlated to fewer days of active drilling during the 14 days offshore.

HRCT abnormalities were detected in 54%, but coarse fibrosis with honeycombing was not observed.
Conclusion After correction for diurnal variation in pulmonary function, a statistically significant decline in FEV_1 was observed among the drill floor workers. There were indications of a connexion between pulmonary function decline and exposure factors other than oil mist.

Poster Presentation
Disease Surveillance

0014 HOW DO WE ELIMINATE OCCUPATIONAL DISEASES IN GREAT BRITAIN?

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In our view there is an inverse care law operating in Great Britain (GB), in that access to occupational health services (OHS), which are adequate to find occupational diseases (ODs) at an early enough stage to prevent progression, is accessible to only the circa 13% of the labour force[1], who are mostly at low risk[2].

This is because:

- There is no access to OHS through the National Health Service[2]
- There is no legal obligation, either on the state or on employers, to provide OD surveillance, except for circa 0.1% of the workforce[2].
- There is no protection for occupational health professionals (OHPs), who are paid directly or indirectly by employers. Employers can change service providers if they receive unwelcomed reports of diseases or hazards[2,3]
- Doctors who diagnose ODs are not required to report them to a compensation scheme or the Labour Regulator in GB[4]
- As the duty to report cases of ODs rests on employers, these are negligibly reported to the Regulator; consequently the causative workplaces are not being identified or rectified[2,5]
- OHPs now spend most of their time on sickness absence/performance management cases, rather than on detecting and preventing cases of OD[2].

The result of the above is that workers in GB are unjustly denied early detection of harm to their health, with prompt compensation and the opportunity to avoid further harmful exposures.

Unless action is taken to address these issues, by accurately ascertaining the distribution and addressing the determinants of ODs, their elimination will not be achieved in GB.

Poster Presentation

Psychosocial

0015 THE SIGNIFICANCE AND APPLICATION OF SALIVARY BIOMARKERS OF STRESS, CORTISOL AWAKENING RESPONSE, IN OCCUPATIONAL PSYCHOLOGY

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Objectives This study aims to investigate the correlation between cortisol awakening response (CAR) and sleep quality, mental stress, fatigue, workload and health status in a period of 28 days.

Materials and Methods A total of 28 subjects participated in this study. The saliva was collected by cotton-based Salivette at awakening, 30 min after awakening, and bedtime for a period of 4 weeks. The saliva cortisol was measured by LC-MS-MS. Four parameters were used to present CAR, 30 min post-awakening cortisol, CAR denoting rise from awakening to 30 min post-awakening (slope), AUC for CAR, and full AUC (= AUC for CAR + AUC for late decline). The outcomes variables included sleep quality measured by Pittsburgh sleep quality index (PSQI) questionnaire, and self-rated workload, mental stress, fatigue, and health score for each day.

Results CAR were correlated with fatigue score and stress score, but not with sleep quality (PSQI), workload and health score. Regarding parameters of CAR, AUC for CAR and full AUC are better than CAR slope and 30 min post-awakening to correlate with fatigue and stress. AUC for CAR and full AUC may represent the degree of mental stress and fatigue in the previous day.

Discussion We have found single day CAR and 4 week CAR were correlated with mental stress. But how to design a study to elaborate whether CAR can predict the occurrence of cardiovascular diseases (Karoshi) needs further to be solved. Solution for variation of CAR day-to-day and pick-up the day of most stressful are urgent.

Poster Presentation

Methodology

0016 ASSOCIATION BETWEEN PM 2.5 EXPOSURE AND LIPID PEROXIDATION WAS CONFIRM BY REPEATED MEASUREMENTS LONGITUDINAL STUDY WITH A PROPER INTERACTION TERM

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Objective to examine the relations between personal exposure to PM2.5 and inflammatory and oxidation markers.

Methods We conducted a panel study with three sampling time points (baseline, two months follow-up, and four months follow-up) among 68 healthy non-smoking young adults from 3 different areas (Area A [residential and commercial area], Area B [industrial area] and Area C [scientific park]).

Results the average PM2.5 concentrations was 37.3 μg/m^3 for personal sampling and 31.6 μg/m^3 for nearest air quality monitoring station. Among them, the personal PM2.5 concentrations in B zone was significant highest than A and C zone. For the longitudinal study, we used linear Mixed-model was as follows: $Y_{it} = \alpha_0 + \alpha_1 Time_{it} + \beta_0 Z_{km} + \beta_1 Z_{km} Time_{it} + \gamma X_{i0} + \epsilon_{km} + \epsilon_i + \epsilon_{it}$, where Z_{km} used four PM2.5 counting methods: (1) personal PM2.5 concentrations; (2) average personal PM2.5 concentrations at three sampling times; (3) average personal PM2.5 concentrations with area under the curve during 120 days; (4) average personal PM2.5 concentrations during 120 days (>35 μg/m3 vs.≤35μg/m^3). After adjustment for age, gender, smoking habits, sampling zones, height, weight, temperature, and relative humidity, we found that the Urinary N7-MeG/creatinine was significantly decreased with PM2.5 exposure concentrations, and Urinary HEL/creatinine was significantly increased with PM2.5 exposure concentrations by time, regardless of which PM2.5 exposure models were used. While we only used average personal PM2.5 concentrations at three sampling times, we found that SDNN and GPx were significantly increased with PM2.5 exposure concentrations by time.

Poster Presentation

Working Conditions

0018 DO HIGHLY ACTIVE WORKERS DIE EARLY? ELUCIDATING THE PHYSICAL ACTIVITY HEALTH PARADOX IN A SYSTEMATIC REVIEW WITH META-ANALYSES

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Introduction New evidence suggests a physical activity (PA) health paradox, with positive health outcomes associated with high intensity leisure-time PA (LTPA), but negative health outcomes for those engaging in high intensity occupational PA (OPA). The aim of this study was to examine this paradox by systematically reviewing evidence on the association between high OPA and all-cause mortality.

Methods A systematic search of the literature was performed screening for eligible (peer-reviewed articles on prospective studies. Meta-analyses were performed assessing the association of high (compared to low) intensity OPA and all-cause mortality in males and females, estimating pooled hazard ratios (HR) with 95% confidence intervals (95% CI).