Introduction Health of emergency responders is often overlooked. We aim to study the physical and mental health of non-professional emergency responders in a healthcare institution.

Methods This cross-sectional study used data from medical examination required for employees attending the Emergency Responder Course. The physician-administered questionnaire consisted of: demographics, medical history and lifestyle practices (smoking, alcohol and exercise). Physical examination included weight, height and blood pressure. Indirect standardisation method was used to calculate the standardised prevalence ratio (SPR) to compare with the results from the National Health Survey 2010, adjusted for age, ethnicity and gender. Kessler Psychological Distress Scale (K10) was dichotomized to assess for psychological distress. Prevalence risk ratio was used to explore the association between physical and mental health.

Results There were a total of 65 participants, with mean age of 49.4 years. Crude prevalence for diabetes, hypertension, dyslipidemia, overweight and smoking were 18.5%, 23.1%, 27.7%, 67.7% and 26.7% respectively. 41.7% of the 12 diabetics had HbA1C >7.5% and blood pressure of 66.7% of hypertensive participants were uncontrolled. Mean BMI was 26.9 kg/m². SPR for dyslipidemia and overweight were 1.14 and 1.39 respectively. SPR for other chronic diseases ranged from 0.76–0.89). 11 (16.9%) had abnormal K-10 score. Hypertension was associated with abnormal K-10 score (Prevalence Risk Ratio 4.0, 95% CI 1.41–11.3).

Conclusion Despite possibility of healthy worker effect, there is a high prevalence of overweight and dyslipidemia among emergency responders compared to the national population. Interventions are needed to safeguard overall health of emergency responders.

Oral Presentation

Developing Countries

0234 OCCUPATIONAL EXPOSURE TO N-HEXANE IS ASSOCIATED WITH REDUCED FSH LEVELS AND ALSO WITH PROLONGED MENSTRUAL CYCLES IN MEXICAN WORKERS OF REPRODUCTIVE AGE

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Introduction Former studies in rodents and cell lines have demonstrated ovarian toxicity caused by n-hexane and/or 2,5-hexanedione (2,5HD). In women occupationally exposed to solvents, variables "menstrual cycle period" and "time for getting pregnant" have been longer compared with controls, without identifying a compound responsible for those effects.

Material and methods We studied a group of Mexican women labouring in a shoe Factory (n=32). Individual environmental levels for seven compounds, included n-hexane, were

measured. Also, urinary 2,5HD and seric FSH and anti-Müllerian hormone (AMH) as potential biomarkers of ovarian toxicity, in addition to a gynecological history were obtained. We performed all tests and questionnaires in a reference group as well (n=32).

Results Mean exposure levels to n-hexane (49.2±39.6 mg/m³) and toluene (30.8±24.5 mg/m³) were the highest observed. There were no significant differences in serum FSH and AMH concentrations between groups (p>0.05). Exposed group showed prolonged menstrual cycles (p=0.007) and augmented time for getting pregnant compared with controls (p=0.007). Also in the exposed group, significant correlations were observed between FSH levels and n-hexane (r=-0.34, p=0.028) as well as FSH and 2,5HD (r=-0.33, p=0.029).

Conclusions n-hexane exposure may be responsible for a prolonged menstrual cycle. As judged by the correlations between FSH with n-hexane and 2,5HD this affection could be in the endocrine pathway rather than in the ovary itself. n-hexane could act as endocrine disruptor in women of reproductive age.

Oral Presentation

Disease Surveillance

0235 FRAMEWORK TO MATCH EXPOSURE AND HEALTH OUTCOMES TO BUILD HEALTH MANAGEMENT SYSTEM FOR CONSTRUCTION WORKERS IN KOREA

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Background Majority of construction workers are daily workers who move into many places frequently. Because of this characteristic of construction workers, it is difficult to monitor their exposure status and manage health including periodic health check-up. Therefore, there is a need to establish a health management system, which includes method to assess exposure and health status.

Methods Identification data for individual will be gathered based on the database of the Construction Workers Mutual Aid Association (5 million registered) and the Korean Construction Workers Union database (7000 registered). Those databases have present job title and duration. Since the database do not have exact past exposure data, questionnaire using mobile and web survey will be considered. Main interest of exposures are asbestos and silica using Korean JEM. Major health outcomes will be asbestosis, chronic obstructive pulmonary disease, lung cancer. In addition, other diseases including musculo-skeletal disorders can be the other outcomes. Health outcomes will be recognised by the data of the National Health Insurance data by matching social security numbers whose were acquired from the exposure database.

Results This is in the beginning of the study. The detailed study design will be formed in the first year (2017). In 2018, preliminary analysis with matching of JEM and health outcomes in individual level will be given. Health management system and prospective cohort follow-up will be conducted after 2019. In the presentation, detailed study design, data-