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PREVALENCE OF ASTHMA IN THE U.S. POPULATION, 1988-1991. K.M. Bang* and J.H. Kim (National Institute for Occupational Safety and Health, CDC, Morgantown, WV 26505)

The Third National Health and Nutrition Examination Survey (NHANES III), 1988-1994, provides national data for respiratory conditions among the civilian noninstitutionalized population of the United States. NHANES III, a 6-year survey measuring the health and nutrition status of the U.S. population, was conducted by the National Center for Health Statistics. NHANES III data consists of two data sets: phase 1 (1988-1991) and phase 2 (1992-1994). The prevalence of asthma was estimated from the phase 1 data of household interview surveys. For proper estimates of standard errors of the asthma prevalence, the SUDAAN program was used incorporating sample weights and accommodating the multiple stage sample design of the survey. Of the 9,487 sampled adults, 20 years of age and older, the overall prevalence of asthma was 7.6% (95% CI, 7.3 - 7.9%). Asthma was more prevalent among men (7.8%) than women (7.5%). By ethnicity it was lower among Mexican Americans (5.0%) than non-Hispanic whites (8.0%) and non-Hispanic blacks (7.3%). The asthma prevalence was substantially higher among smokers (8.0%) and former smokers (7.9%) than non-smokers (7.2%). Among industries of which 40 or more employees were sampled, asthma was most prevalent among nursing and personal care facilities (16.6%). Other industries with high prevalence of asthma include elementary and secondary schools (12.0%), automotive repair shops (9.2%), justice, public order and safety (8.6%), machinery industries (8.5%), and eat and drinking places (8.1%). These findings provide useful information for asthma prevention strategies and for hypothesis generation for future work-related asthma studies.

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RELATIONSHIP BETWEEN WORKERS' REPORTS OF PROBLEMS OF LEGITIMACY AND VULNERABILITY IN THE WORKPLACE AND DURATION ON BENEFITS FOR LOST-TIME MUSCULOSKELETAL INJURIES. J. Smith,* V. Tarasuk, S. Ferrier, and H. Shannon (Institute for Work & Health, Totonto, Ontario, Canada M4W 1E6)

Qualitative research has suggested that problems of suspicion and mistrust in the workplace influence workers' experiences of musculoskeletal injury and disability and may affect prognosis. The association between reported problems of legitimacy and vulnerability in the workplace and time off work was examined using data from the Early Claimant Cohort (ECC) Study, a study of 1572 workers filing lost-time compensation claims for musculoskeletal injuries. Factor analysis of the ECC demographic variables confirmed variable patterns measuring an underlying "Workplace Psychosocial Vulnerability" (WPV) construct containing the following questions: 1) "Will filing a claim affect your job?"; 2) "If you were being treated unfairly by your employer, could you do anything about it?"; 3) "If you were being treated unfairly by the WCB, could you do anything about it?"; 4)"Are you aware of worker protection rights under the law?". Preliminary results show that a non-positive supervisor reaction to a worker filing a claim resulted in longer mean duration on 100% benefits (106 days versus 91 days). Factor scores for WPV were divided into tertiles and higher vulnerability was associated with longer mean duration on 100% benefits (88 days,95 days and 105 days for low, medium and high vulnerability respectively). Cox proportional hazards modelling showed that there was no significant interaction of severity of injury measures with either supervisor's reaction or WPV. Demographic profiles of workers reporting negative supervisor reactions and high WPV were developed. The prognostic importance of these constructs highlights the need for workers' perceptions of workplace relations to be considered in the management of musculoskeletal injuries and disability.

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INTER- AND INTRA-RATER RELIABILITY IN THE ASSESSMENT OF OCCUPATIONAL EXPOSURE TO HEAVY METALS BY INDUSTRIAL HYGIENISTS. B. Rybicki,* C. Johnson, E. Peterson, G. Kortsha, B. Cleary, and J.M. Gorell (Henry Ford Health Sciences Center, Detroit, MI 48202)

Retrospective occupational exposure assessment by expert review is generally more reliable than other methods, but the lack of true exposure data and subjectivity in this method can lead to exposure misclassification. To evaluate the amount of subjectivity in occupational exposure assessments by one industrial hygienist (IH), the authors used data from a case-control study of a neurologic disease and heavy metal exposure. The original exposure assessment by the study IH for the heavy metals copper (Cu), iron (Fe) and lead (Pb) was done blinded to case status for 608 subjects with 3,033 total jobs. A comparison was made of exposure assessments from this first review with a second review of 240 jobs by the same IH (intra-rater) and a review of 359 jobs by a different IH (inter-rater). Job samples for the reliability study were weighted toward exposed individuals based on the exposure assessment from the first review. A fair amount of subjectivity was found, with inter-rater reliability usually higher than intra-rater reliability, however, the magnitude of these differences were small. The percent agreement for the intra- IH comparisons was 89.6 for Cu, 87.9 for Fe and 94.6 for Pb, whereas the inter-IH percent agreements were 86.4 for Cu, 81.1 for Fe and 76.2 for Pb. A reanalysis of the data stratified by case status to test for possible confounding of the disease under study with exposure did not change the results. In summary, the subjectivity associated with IH occupational exposure assessment of heavy metals is non- differential and depending on which review is more accurate may dampen measures of effect. If questionable exposures can be rectified with a second review, the overall change in exposure assessments should be similar if done by the same or a different IH.

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HEALTH INSURANCE CLAIMS ASSOCIATED WITH INTERNATIONAL BUSINESS TRAVEL. B. Liese, K. Mundt,* L. Dell, L. Nagy, and B. Demure (The World Bank, Washington, DC 20433)

Sudden changes in climate, environment and time zones, and the related physical and psychological stress associated with international business travel may pose health risks beyond exposure to endemic diseases. To investigate whether employees (n=10,884) of The World Bank experienced more disease due to work-related travel, the authors compared health insurance claims filed by 4,738 travelers logging nearly 250,000 travel-days on international mission during 1993 with claims of non-travelers. Diagnoses coded to the Ninth Revision of the International Classification of Diseases (ICD- 9) were analyzed using standardized claims rate ratios (SRRs), by mission frequency, controlling for age and gender. Overall, travelers filed claims at a rate higher than non-travelers: 80% higher among males and 18% among females. For several diagnostic categories, SRRs increased (relative to non-travelers) with category of missions (1, 2, to 3, or 4 missions). Infectious disease (ICD 001-139) SRRs increased as follows: 1.28, 1.54, and 1.97, respectively, among males, and 1.16, 1.28 and 1.61, respectively, among females. The greatest excess was seen for psychological disorders (ICD 290-319). For males, SRRs were 2.11, 3.13, and 3.06 by category of missions, and for females, SRRs were 1.47, 1.96, and 2.59. While business travelers possibly seek medical services more frequently than non-travelers, such a utilization bias does not explain the increasing claims rates for infectious disease and psychological disorders by frequency of mission. In contrast, employees with severe health problems may limit travel, thereby attenuating the apparent associations. Nevertheless, the excess of claims for psychological disorders increasing with number of missions is plausible, given the stress of separation from family, language and cultural differences, and work demands abroad and upon return. These preliminary findings have prompted additional research considering nationality, mission destination, purpose and duration, time zones crossed, and temporal relationship between travel and the incidence of disease.

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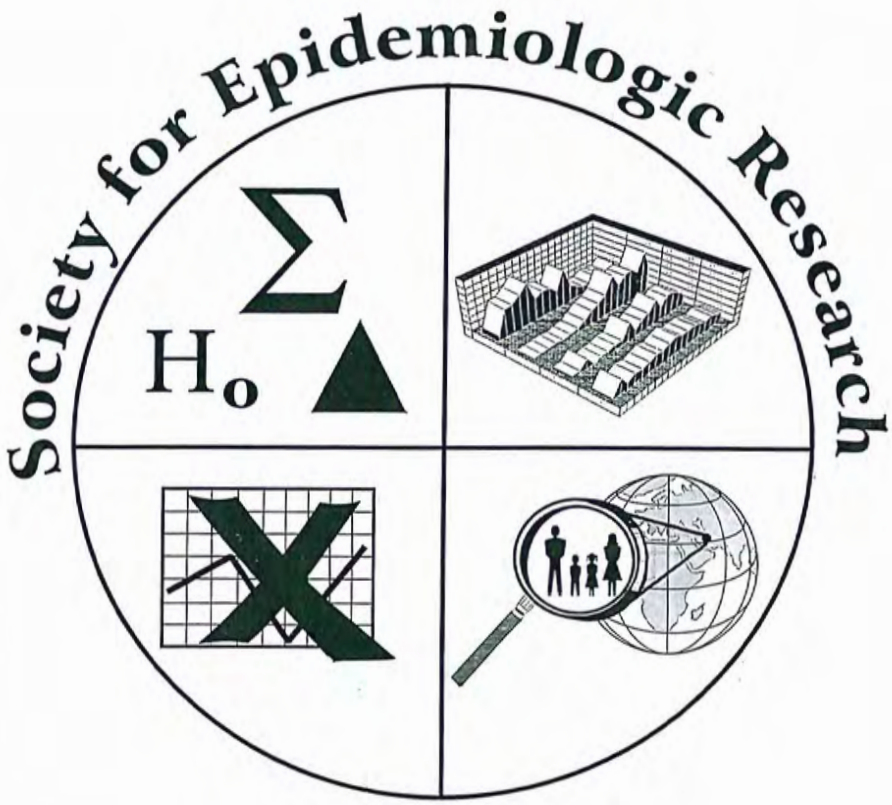

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