

**0419 OCCUPATIONAL INJURIES AMONG CHILD LABOURERS: PRELIMINARY RESULTS FROM A STUDY OF THE BRICK MANUFACTURING INDUSTRY IN FOUR COUNTRIES**

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**Objectives** Internationally, brick kilns employ tens of thousands of children. Due to the extreme poverty facing families who work in this industry, child labour in this sector has been challenging to eliminate. This study assesses the association between brick kiln work and self-reported injuries among children working in brick kilns in Afghanistan, Bangladesh, Nepal, and Pakistan.

**Method** A mixed-methods approach developed by an international team was translated and tailored for each country. Working children (aged 11–17) were identified from 1–3 brick kiln sites. Non-working controls, matched for age, sex, and socioeconomic status were identified from nearby communities. Trained interviewers administered semi-structured questionnaires to all consenting respondents.

**Results** 917 working children and 788 controls participated in the study. Overall, 65.1% of cases and 29.5% of controls reported experiencing a minor cut or bruises in the last month. The estimated odds ratio (OR) of recent injury was 3.60 (95% CI: 2.84–4.56) comparing working children to community controls (adjusted for age category, sex, and country). Nearly half (48.8%) of cases and 30.5% of controls reported a “bad cut”, broken bone, sprain, or burn in the last year, resulting in an adjusted OR of 2.44 (95% CI: 1.97–3.03) comparing working children to controls.

**Conclusions** While the hazardous nature of brick kiln work may be evident, this study was designed to provide evidence for parents, brick kiln operators, and policy-makers who seek to remove children from this work. Additionally, this work demonstrates a model for action-oriented, occupational health and safety research in challenging environments.

**0421 NOISE-INDUCED STRESS AMONG PRIMARY CARE WORKERS IN LONG TERM CARE FACILITIES IN BRITISH COLUMBIA, CANADA**

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**Objectives** Sound environments in healthcare facilities are characterised and reported to be poor, and suggest adverse effects on patients and health care workers. This research aimed to examine the acoustical characteristics of long-term care facilities and evaluate the association between noise conditions and stress among residential care workers.

**Method** We recruited from long-term care facilities in Greater Vancouver, representing a range of building characteristics that influence background noise levels, reverberation time, and speech intelligibility index. Repeated measurements of noise (personal dosimeters and area assessments) and stress (heart rate variability (HRV) and salivary cortisol levels) were collected along with self-reported measures of stress for modelling.

Results Ninety-nine residential care workers participated, most of which were female (89%) and registered care aides (RCAs) (58.8%). Each participant contributed four days of measurements, on two consecutive days followed by another two consecutive days at least 2 weeks later, for a total of 392 person-days of measurements. Participants were exposed to mean A-weighted average sound pressure level of 74.8 dBA (range: 60.3–90.2 dBA) with RCAs and evening shift workers experiencing the highest mean personal exposure levels at 75.3 and 75.8 dBA, respectively.

Licensed practical nurses (LPNs) and those working the evening shift had the highest perceived stress scores, while RCAs were found to be the most stressed group of participants, with the lowest HRV and the lowest diurnal cortisol values.

**Conclusions** These results suggest that noise levels experienced by residential care workers induce an autonomic stress response capable of contributing to burnout, job dissatisfaction and increased absenteeism.

**0424 THE INJURY PREVENTION EFFECTS OF REGULATORY WORKPLACE SAFETY INSPECTIONS IN BRITISH COLUMBIA, CANADA FROM 2001 TO 2011**

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**Objectives** To determine if inspections by the workplace safety regulator (WorkSafeBC) in the Canadian Province of British Columbia are associated with a reduction in firm injury rates.

**Method** Injury, inspection, and claims data collected by WorkSafeBC were analysed to determine the lost-time rates for all single-location firms that had been in operation in British Columbia for at least four years between the years of 2001 and 2011. Log-linear generalised estimating equations analyses were conducted to examine the effect of a workplace inspection on the change in injury rates between the year of inspection and the following year. Models were adjusted for time and sector.

**Results** 74 510 firms met the eligibility criteria, with about 3% of firms per year experiencing an inspection, over the time period of 2001 to 2008. The ratio of firms inspected varied by sector, for example, about 8% of primary resources firms were inspected per year during this same period. Inspected firms had a higher injury rate (10 SLF claims per 100 FTE annually) compared to non-inspected firms (4 claims per 100 FTE).

Through GEE analyses, it was found that an inspection reduced injuries (beta coeff= -0.0048 (-0.0067, -0.0029)) in the year following an inspection. The effect was greater for larger (>=10FTE) (beta coeff=-0.015 (-0.021, -0.009)) versus smaller firms (<10FTE) (beta coeff= -0.0067 (-0.0094, -0.0040)).

**Conclusions** These results suggest that inspections do have injury prevention effects, and the differing effects by firm characteristics may indicate the opportunity to target firms according to the most appropriate intervention.

**0425 VALIDATION OF THE THAI VERSION OF A WORK-RELATED QUALITY OF LIFE SCALE**

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