

of working time. Moreover, 'High physical demanding service' were significantly concerned by largest fraction of handling time (1.77%), by lower degree of autonomy of handled patients (1.51% of total working time), and by handling patients having weight exceeding 65 kg (1.57% of total working time). According to the Chamoux scale, global physical activity was classified rather heavy in all services groups, with an average score significantly increasing from 7.25 to 7.76 from 'light' to 'high' physical demanding services (Anova=0.039).

Conclusion Our investigation objectified variable levels of biomechanical constraints in hospital services. Ergonomic and organizational preventing measures should be set up to prevent serious consequences among caregivers, in particular those affected to heavy services.

P-260 FATAL WORK-RELATED INJURIES INVOLVING MOTORCYCLE BY SEX, AGE AND OCCUPATIONAL SECTORS IN BRAZIL, 2007 TO 2018

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Introduction Brazilian records show a high rate of traffic accidents involving motorcycles (30% of deaths, 55% of hospitalizations). The number of Brazilian workers who use motorcycles is increasing and it is necessary to understand the context of these accidents in order to develop public policies and promote education.

Objectives To describe the proportion of mortality by work-related injuries (PM_WRI) involving motorcycle in Brazil, 2007–2018.

Methods The study was conducted with data from the Brazilian Mortality Information System for those aged 18–65 years, in 2007–2018. Motorcycle-related deaths correspond codes V20 to V29 (ICD-10). PM_WRI are presented by calendar year, sex, age and occupational groups.

Results There were 121,124 records of fatal injuries involving motorcycles, with a increasing linear trend from 7,502 in 2007 to 9,725 in 2018. Work-related data (WRD) were registered for only 48,716 (40.2%) cases, from which 3,692 were classified as occupational. From 2007 to 2010, the PM_WRI went from 7.6% to 8.9% (maximum) when it started to fall until 2015 (6.4% minimum). The average for the last three years was 7.4%. No significant difference of PM_WRI by sex was found. PM_WRI increased with age but declined in the oldest age group (50–65 age years). Occupation was registered for 33,784 cases (69% of the WRD). The highest PM_WRI was estimated among workers from service industry (14.3%) followed by administrative services (13.6%). Agriculture had the largest number of motorcycle-related deaths (35%) but only 3.1% was recognized as work-related.

Conclusion The work-related data in death certificates were poorly recorded, limiting conclusions on the contribution of labor on motorcycle associated deaths. PM_WRI estimates were presumably underestimated and findings could be biased. Motorcycle-related deaths doubled over the study time and the role of labor for this need to be better understood. Improvements in the quality and completion of WRD are urgently needed and prevention programs implemented.

P-261 SEMI-QUANTITATIVE ERGONOMIC ASSESSMENT OF BIOMECHANICAL RISK FACTORS OF THE UPPER LIMBS' MUSCULOSKELETAL DISORDERS AMONG TUNISIAN JEWELRY CRAFTSMEN

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Introduction Jewelry handcrafting activity is strongly associated with biomechanical constraints and high risk of upper limb musculoskeletal disorders (UL-MSDs).

Objective This study aims to assess biomechanical constraints and specific tasks and subtasks at risk of UL-MSDs among jewelry craftsmen.

Methods Open observations were conducted in several jewelry workshops during whole working days. These observations allowed us to identify representative work periods, tasks and subtasks and to set the number of recordings at fourteen according to 'homogeneous exposure group' (HEG) sampling recommendations. For each video recording (duration=30 to 40 minutes), 100 images were extracted through regular stops on fixed time intervals. In each image, postures were encoded and analyzed by ERGOROM software. Gestural Variability Score (GSV) was calculated based on variability of posture from one image to the next.

Results Six main tasks composed handcrafting jewelry activity (mold making; fusion and gluing metal; demoulding; sanding; crimping and polishing). These tasks were associated to eleven subtasks (the creation of impression in the mold, the heating of the metal, the welding during assembly of the piece.). Objective analysis revealed that jewelers spent 38% of their working time with the neck in flexion exceeding 40° or extension, and the shoulders in adduction, extension or visible rotation during 60.8% of the time. The elbow articulation was maintained in extreme pronation in 40.4% of the working time and flexion between 60° and 100° during 78.1% this time. The ulnar deviation of the wrist was observed during 40.9% of work time and the pinch grip for over 79.5% of it. In addition, the high variability score was noted especially for elbow joint and shoulder, reflecting a rapid postural change and high repetitiveness.

Conclusion Our results, suggest the necessity of preventive actions among jewelers craftsmen, with mainly the introduction of ergonomic design of hand tools.

P-268 METAL EXPOSURE AND RISK OF PARKINSON'S DISEASE: SYSTEMATIC REVIEW AND META-ANALYSES

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Introduction Parkinson's disease (PD) is the second most common neurodegenerative disorder. Metal exposure has been suggested as a possible environmental risk factor by many epidemiological studies, but results have been inconsistent. Additionally, existing reviews on metal exposure and PD risk lack careful screening for study design and quality, especially on the exposure assessment.

Objectives We aimed to synthesize the literature on metal exposure and PD risk by examining the quality of the overall study and exposure assessment method.