## Cigarette Smoking among Military Police Officers

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Introduction: Cigarette smoking is a main concern in public health, not properly studied among military police officers. This study investigates aspects related to smoking status in São Paulo Military Police members, Brazil.

Methods: 903 military police officers were interviewed about smoking status, age, gender, civil state (single, married or divorced), stress level (based on the reported self perception of being a 'stressfull person' or not), physical activity (based on reported self perception of being physically active or not) and hierarchy (classified as higher or lower). The relationships between smoking status and the mentioned variables were analysed.

Results: 88.9% were men, mean age was 35.7 [6.6] years (ranging from 20 to 54 years), 71.9% were physically active, 29.9% was feeling stressed and 4% had higher hierarchic level. Relating to the civil state, 21.6% were singles, 70.3% married and 8.1% divorced. The cigarette smoking prevalence was 32.7%, mean daily cigarette consumption of 11.2 [7.9].

Cigarette smoking was related to masculine gender (33.6% vs 25% in women, p=0,03), poor physical activity (40.2% vs 29.7% in physically active ones, p=0,002) and higher age (13.3% in the 20-29 years of age range and 47.3% in 40 or more years of age, p<0,001).

Conclusions: the smoking prevalence observed was significantly higher than in the adult brazilian population, 21% (p<0,001). Three aspects were markedly different from the literature (in general population): (a) smoking prevalence was directly proportional to the age range; (b) higher herarchic level (presumed to be associated with better socioeconomic status) was not associated to lower smoking prevalence; and (c) self-reported level of stress was not a good marker for smoking status. Different aproaches for socioeconomic status and stress evaluations may change observations and guide future researches.

## Initiation, Exacerbation of Asthma, and Leaving Work in Two Cohorts of Autoworkers Exposed to Metalworking Fluids

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RATIONALE: Asthma has been linked with occupational exposure to metalworking fluids in surveillance and case studies, but rarely in epidemiologic studies. The objective of this study was to examine self-reported exacerbation and new onset of MD diagnosed asthma in relation to workplace exposure to metalworking fluids and to leaving work. METHODS: An asthma questionnaire was designed and mailed to a cohort of new hires and to workers who previously participated in a 1984 cross-sectional study in two automobile manufacturing plants. Information was collected on exacerbation of pre-existing asthma, new onset asthma, symptoms and employment history. Recall of specific timing of first (post-hire) and most recent asthmatic episodes was also ascertained. RESULTS: The participation rate among 1500 new hires and 1500 resurveyed workers was 47%. New hires were younger (median age 33 vs 52), had worked less (2 vs 25 years), and reported less asthma (8% versus 9%) than the resurveyed workers. Among new hires, 1% reported post-hire asthma, 3% left work for health reasons, and exposed workers stayed at work longer (p<0.05). Among older workers, cumulative incidence of asthma was 9% and 40% were no longer employed at follow-up. Among the asthmatics, 66% were no longer employed, i.e., asthma was associated with leaving work. The prevalence ratio for a post-hire asthmatic event was 5.0, comparing exposed to unexposed workers. 10% of subjects reported that they had ever changed jobs because of asthma. Median time to asthma was 6 years at baseline, 16 years at follow-up, and 0.5 years among new hires. CONCLUSIONS: Post-hire asthma is related to leaving work among older workers.

## Quality of Life of Adults with Workplace Exacerbation of Asthma

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Cross-sectional survey data from 598 adults with asthma were explored for a relationship between workplace exacerbation of asthma (WEA) and quality of life (QOL). Based on univariate analyses, study participants with WEA had a statistically significant higher Total QOL score, indicating a worse QOL, than participants whose asthma was not work-related (2.43 v. 1.74, p≤0.001), and also higher scores on the instrument's four subscales for Breathlessness, Mood, Social, and Concerns (Table 1). Regression models were fit for the Total QOL score and each subscale score, and included terms for potential confounders (gender, race, education, smoking, asthma treatments). WEA continued to have a statistically significant relationship with Total QOL and all QOL subscales except Breathlessness (p<0.1). In summary, WEA was strongly associated with a worse QOL.

Table 1. Mean Total and Subscale Scores (SE) from Mark's Asthma Quality of Life Questionnaire, by WEA Status and for All Participants

| | Participants with WEA (n=136) | Non-WEA participants with asthma (n=462) | All participants (n=598) |
|---|---|---|---|
| Total** | 2.43 (0.17) | 1.74 (0.08) | 1.89 (0.08) |
| Breathlessness* | 2.70 (0.17) | 2.24 (0.09) | 2.34 (0.08) |
| Mood* | 2.17 (0.19) | 1.60 (0.09) | 1.73 (0.08) |
| Social** | 2.10 (0.21) | 1.29 (0.09) | 1.48 (0.08) |
| Concerns** | 2.41 (0.20) | 1.55 (0.09) | 1.74 (0.08) |

Based on Student's t-test comparing WEA to non-WEA participants: *p≤0.05 **p<0.001

## Risks of Death from Respiratory Disease and Incidence of Lung Cancer in a Cohort of Registered Nurses

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Rationale: The hospital environment has many potential respiratory hazards, including exposure to anaesthetic gases, powdered medications and disinfectants. Our objective was to determine whether registered nurses (RNs) had an increased risk of respiratory-related deaths or cancer associated with their field of employment.

Methods: The cohort consisted of 58,125 RNs in British Columbia who were registered for at least one year with their professional association between 1974 and 2000. Cohort records were linked to the Canadian Mortality and the Cancer Incidence databases. Poisson regression modeling was used for within-cohort comparisons, using 10-year latencies.

Results: For female RNs, standardized mortality and incidence ratios (SMR, SIR) were very low for deaths from COPD (SMR 0.5; 95% CI 0.4-0.7) or other respiratory disease (SMR 0.5; 95% CI 0.3-0.9) as was the SIR for lung cancer (SIR 0.6; 95% CI 0.5-0.7). However, in comparison to other RNs, working in medical/surgical specialties (including OR, PARR, emergency and critical care) was associated with elevated risks of death from COPD (RR 2.0; 95% CI 0.8-5.0, 5 deaths) and of incidence of lung cancer (RR 2.6; 95% CI 1.5-4.5, 14 cases). There was an increased risk of death from COPD for RNs working in maternal newborn/pediatrics departments (RR=2.1; 95%CI 1.0-4.5, 8 deaths) and for RNs working in mental health (RR=2.5; 95% CI 1.1-5.9, 6 deaths).

Conclusion: Indications of excess mortality due to COPD were found for RNs working in specific fields. Differences in smoking habits may explain some of the excess, however further investigation of possible occupational respiratory health risks associated with nursing work is warranted.

## Excessive Longitudinal FEV₁ Decline and Long-Term Health: A Case-Control Study

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RATIONALE: Spirometry is often performed annually to monitor lung health. Excessive $FEV_1$ loss in an individual is considered a useful indicator of the development of lung disease.

METHODS: Using medical monitoring data collected between 1973 and 2003 at a large chemical plant, longitudinal $FEV_1$ slopes (ml/yr) were calculated by simple linear regression for all workers (N = 1428) with ≥5 valid measurements over ≥10 years. Cases were defined by $FEV_1$ slopes below 5th percentile values (-65, -56 ml/yr for white and black males, and -50 ml/yr for white females). Cases (N=64) were matched with controls (N=94, $FEV_1$ slope range = -46 to 26 ml/yr) for race, gender, smoking status, year of birth, age, height, and calendar year of first test. Health information on medication use, respiratory symptoms and signs, and lung disease diagnoses was abstracted from existing plant medical records for the 4 years prior to the last spirometry. The significance of differences in frequencies of health outcomes was tested using matched paired chi square tests (McNemar's Test or Exact McNemar's Test).

RESULTS: Cases had a higher proportion of several respiratory health outcomes compared to controls, including medication use for respiratory diseases (24.3% vs. 4.7%, p<0.0001), diagnosis of COPD or emphysema (17.8% vs. 1.9%, p=0.0002), dyspnea (15% vs. 3.7%, p=0.0042), and wheezing or rhonchi on examination (10.3% vs. 1.9%, p=0.0225).

CONCLUSIONS: This study expands the scientific basis for monitoring respiratory health using spirometry, by providing quantitative estimates of the increase in respiratory disorders (from 4 to 9 times) among individuals with accelerated $FEV_1$ declines.

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