

## RACIAL DISPARITIES IN OCCUPATIONAL INJURY: OBSCURED BY ADMINISTRATIVE DATA?

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**Statement of the problem:** Minority and otherwise marginalized workers are disproportionately exposed to dangerous working conditions. As a result, health outcomes associated with adverse working conditions often occur along social and economic gradients. Although occupational health disparities overall are well-documented, barriers remain to understanding the true nature of injury reporting disparities, most as a result of the limitations of administrative injury data. Thus, the extent of differential injury undercount by demographic group is unknown.

Our aim was to determine whether reporting discrepancies between self-reported and administratively-reported injuries varied by racial and ethnic groups by comparing self-reported and administrative injury data on the same workers over the same time period. We hypothesized that we would detect greater racial and ethnic disparities in injury using self-reported rather than administrative data.

**Procedures:** The study took place in a cohort of patient care workers employed in two large hospitals in the Boston area. In September 2012, 2,000 workers were randomly sampled for the survey; of those, 1,594 (79%) responded and were included. We eliminated participants missing data on self-reported race and ethnicity (n=15) or self-reported injury (n=11) for a final n of 1,568.

Occupational injury was measured by both self-report and through administrative data. On the self-report survey, respondents were asked, “During the past 12 months, including sharps injuries, were you injured seriously enough while performing your job that you got medical advice or treatment or lost time from work?” To capture administratively-reported injuries, we used data on OSHA-reportable injuries from the hospital’s administrative injury database (hereafter referred to as “administrative data” or “administratively-reported injuries”) and merged those data with survey data at the worker level using secure study ID numbers.

In the survey, workers were asked, “Do you consider yourself Latino or Hispanic?” They were then asked “How would you describe your race? Please check all that apply” (response options: Native American or Alaska Native; Asian, Asian American; Native Hawaiian or Pacific Islander; Black, African-American; White; and Other). We recoded the preceding variables into a single race/ethnicity variable with categories Hispanic; non-Hispanic White; non-Hispanic black; mixed race/other.

**Analyses:** We first examined distribution of the two types of injury outcomes overall and by race/ethnicity. We used logistic regression to model two these two binary outcomes—self-reported injury and administratively-reported injury—adjusting progressively for demographic/personal and then occupational covariates.

**Results:** Approximately 81% of the sample identified as non-Hispanic white (n=1266); 4% (n=64) identified as Hispanic, 8% (n=131) identified as non-Hispanic black, and 7% (n=107) identified as mixed-race or other. Overall, 16% of workers reported on the survey that they were injured during the year prior; self-admitted reporting practices varied significantly ( $p<0.001$ ) by race and ethnicity. We also examined injury patterns using administratively-reported injuries from the database, finding that the overall injury rate was 8% with no significant variation by race/ethnicity.

In models adjusted for age, sex, immigration status, personal financial distress, worksite, shift, and job title, for self-reported injury, black workers had an elevated risk of injury compared with white workers (OR 1.91, 95% CI 1.04,3.49), but Hispanic workers did not (OR 1.27, 95% CI 0.60,2.72). In contrast, in adjusted models for administratively-reported injury, neither black workers (OR 1.22, 95% CI 0.54,2.77) nor Hispanic workers (OR 1.01, 95% CI 0.39,2.66) were at significantly greater risk than white workers.

**Conclusions and practical implications:** Compared with white workers, black workers had significantly increased risk of injury when asked via self-report, but not when using administrative injury data. Findings suggest that undercounting of injuries in employers’ administrative data (on which national injury data are based) may be relatively higher among black workers, obscuring racial disparities in injury risk. This study raises two key questions. First, why do administrative and self-report data present different pictures of racial disparities in

occupational injury? Second, why, after reducing barriers to reporting as in a confidential survey versus an administrative report, do black workers have higher injury rates than white workers?

The practical implications of this study are twofold: first, that hospitals need to reduce barriers to injury reporting, especially among minority workers, because administrative injury data is used for surveillance and policymaking at both the institutional and state levels; and second, that workplaces should address underlying reasons that minority workers, particularly black workers, may be injured at higher rates than white workers.

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- Paper 1** Ten Recommendations for the Design, Implementation and Evaluation of Improvements in Organizations
- Ulrica von Thiele Schwarz, PhD, Karolinska Institutet, Stockholm, Sweden; Julie Reeds, PhD; Henna Hasson, PhD; Kasper Edwards, PhD; Johan Simonsen Abildgaard, PhD; Christine Ipsen, PhD; Caroline Lornudd, PhD; Pamela Mazzocato, PhD; Carl Savage, PhD; Anne Richter, PhD; Karina M. Nielsen, PhD
- Paper 2** Using a Performance Tool to Facilitate Implementation of Action Plans
- Karina M. Nielsen, PhD, Sheffield University Management School, Sheffield, England, UK; Terese Stenfors Hayes, PhD; Henna Hasson, PhD
- Paper 3** Acting With Consideration for Level of Influence
- Christine Ipsen, PhD, Technical University of Denmark, Copenhagen, Denmark; Kasper Edwards, PhD
- Paper 4** Program Logic in a Co-Created Process
- Henna Hasson, PhD, Karolinska Institutet, Stockholm, Sweden; Ulrica von Thiele Schwarz, PhD; Anne Richter, PhD

**Discussant:** Henna Hasson, PhD, Karolinska Institutet, Stockholm, Sweden

#### Underlying Disparities in Occupational Health and Injury in Immigrant and Racial Disparities (Paper Panel Session)

*Marquette V/VI*

**Chair:** Gargi Sawhney, PhD, Clemson University, SC

- Paper 1** Racial Disparities in Occupational Injury: Obscured by Administrative Data?
- Erika Sabbath, ScD, Boston College, Chestnut Hill, MA
- Paper 2** Exploring the Impact of Precarious Employment on the Health of Racialized Immigrant Women in Waterloo Region, Ontario, Canada
- Elizabeth C. Watters, MSW, Wilfrid Laurier University, Kitchener, ON, Canada
- Paper 3** Immigrant Women Workers and Occupational Health
- Nancy L. Marshall, EdD, Wellesley Centers for Women, Wellesley College, MA
- Paper 4** Immigration, Work and Emotional Health: Experience of Latino Immigrant Workers
- Michael A. Flynn, MA, NIOSH, Cincinnati, OH; Donald E. Eggerth, PhD

#### The Economics of Non-Standard Employment Arrangements (Symposium)

*Marquette VII/VIII*

**Chair:** Regina Pana-Cryan, PhD, NIOSH, Washington, DC

- Paper 1** Employment Arrangement, Job Stress, and Health-Related Quality of Life
- Tapas K. Ray, PhD, NIOSH, Cincinnati, OH

- Paper 2** Work Precariousness and Job Stress
- Anasua Bhattacharya, PhD, NIOSH, Cincinnati, OH

- Paper 3** Impact of Non-Standard Employment Arrangements on Earnings and Fringe Benefits: Evidence From the 2010 and 2015 National Health Interview Surveys
- Abay G. Asfaw, PhD, NIOSH, Washington, DC

- Paper 4** Association Between Non-Standard Employment and Financial Stress in a Nationally Representative Sample of U.S. Workers
- Toni Alterman, PhD, NIOSH, Cincinnati, OH

#### **Firefighters and Miners: Environmental Factors and Interventions to Promote Occupational Safety and Health (Paper Panel Session)**

*Marquette IX*

**Chair:** Andrea Davis, MA, MPH, CPH, Drexel University, Philadelphia, PA

- Paper 1** Improving Firefighter Safety and Health: A Closer Look at the Role of the Fire Station
- Emily H. Sparer, ScD, Harvard T.H. Chan School of Public Health, Boston, MA; Gregory Wagner, MD; Glorian Sorensen, PhD
- Paper 2** Overweight and One-Year Long-Term Sickness Absence in Professional Firefighters: Comparison of Three Different Adiposity Measures
- BongKyoo Choi, ScD, University of California Irvine; Marnie Dobson, PhD; Peter Schnall, MD; Haiou Yang, PhD
- Paper 3** Evaluating the Effects of a Psychosocial and Fitness Intervention in Wildland Firefighters
- Caleb Leduc, MHK, Lancaster University, England, United Kingdom; Sabir Giga, PhD; Bill Cole, PhD; Michelle Young, BAHSc; Ian Fletcher, PhD; Sandra Dorman, PhD
- Paper 4** A Field Evaluation of the Physiological Demands During a Simulated Mine Rescue
- Justin Konrad, BSc, Laurentian University, Sudbury, ON, Canada; Dominique Gagnon, PhD; Emily Jago, BSc; Alison A. Godwin, PhD; Tammy Eger, PhD; Caleb Leduc, MHK; Sandra Dorman, PhD

#### **Person-Centered Approach to Burnout (Symposium)**

*Conrad A*

**Chairs:** Anne Mälikangas, PhD, University of Jyväskylä, Finland; Michael Leiter, PhD, Deakin University, Geelong, Australia