



Q2 The need for detailed gender-specific occupational safety analysis

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ABSTRACT

The female workers are growing in number in the United States. Therefore, the occupational health and safety entities must start to analyze gender-specific data related to every industry, especially to nontraditional occupations. Women working in nontraditional jobs are often exposed to extreme workplace hazards. These women have their safety and health threatened because there are no adequate policies to mitigate gender-specific risks such as discrimination and harassment. Employers tend to aggravate this situation because they often fail to provide proper reporting infrastructure and support. According to past studies, women suffered from workplace injuries and illnesses that were less prominent among men. Statistics also confirmed that men and women faced different level of risks in distinct work environments. For example, the rates of workplace violence and murders by personal acquaintances were significantly higher among women. In this paper, the authors analyze prior public data on fatal and nonfatal injuries to understand why we need to differentiate genders when analyzing occupational safety and health issues. Also, the reader will become aware of the current lack of data and knowledge about injuries and illnesses separated by gender and industry.

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1. Introduction

The global labor force had 126% more women in 1997 compared to 1960 (World Bank, 2001), and 47% (68.6 million) of the U.S. labor force in 2014 were women (U.S. Department of Labor, 2015b). Projections indicate that the number of female workers will surpass 92 million by 2050 in the United States (U.S. Department of Labor, 2002). Although women represent almost half of the national workforce, they are underrepresented in some industries and occupations.

Workers are often exposed to occupational safety and health hazards regardless of gender. However, men and women deal with different characteristics of such exposure risks (Bond, Punnett, Pyle, Cazeca, & Cooperman, 2004; Messing et al., 2009; Messing & Mager Stellman, 2006; Messing & Ostlin, 2006). Hoskins (2005) showed that women suffered from workplace injuries, illnesses, and fatalities that were particular to the gender. According to Messing and Mager Stellman (2006), several researchers have argued that we know less about occupational health issues in women than in men. The World Health Organization published a report with an extensive list of recommendations for sex-disaggregated data collection and analysis for occupational exposures, illnesses and injuries (Messing & Ostlin, 2006). Still, we fail to understand gender-specific healthy and safety issues. The U.S. Department of Labor's gender-specific safety and health data (published by the Bureau of Labor Statistics – BLS) are not comprehensive enough to provide extensive knowledge on the issues (Sugerman, Jenkins, & Osorio, 1999). BLS statistics do not breakdown

the data into gender-specific details nor describe event and sectors that are helpful to exploring gender-related health and safety issues.

In the United States, a study on workplace violence (WPV) has also evidenced a gap between male and female workers. The authors proved that WPV is one of the major causes of female workers' injuries but not male workers' injuries (U.S. Department of Labor, 2015a; Tiesman, Gurka, Konda, Coben, & Amandus, 2012). Even as WPV is considered a major injury category, less than 30% of the surveyed employers had a formal policy against it (U.S. Department of Labor, 2005).

We need to analyze gender-specific data to understanding health and safety gaps between female and male workers. Policy-makers will also benefit from gender-specific data analyses by creating policies and inspiring actions that contemplate the differences between men and women at the workplace. Women working in nontraditional occupations will yield even greater benefits from gender-specific policies. The U.S. Department of Labor defines nontraditional occupations as any occupations in which women comprise less than 25% of the workforce (U.S. Department of Labor, n.d.). Health and safety data do not accurately represent such minority. Construction, mining, and transportation industries have several examples of nontraditional occupations for women. Women account for less than 10% of the workforce in the construction industry (less than any other industry), and most of them work in managerial and office occupations. Less than 3% of these women work in the trades (EEOC, 2015). The injuries data in the construction industry thus do not accurately represent the portion of female casualties on site. Female workers in nontraditional industries are very few, and studies and data on women's occupational safety and health in these occupations are even fewer. Additionally, owners and other stakeholders, including safety and health regulatory agencies,

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do not appropriately address workplace challenges that are unique to women (Moir, Thomson, & Christa, 2011).

2. Objectives

In this study, we aim to enlighten the differences between male and female workers when it comes to workplace injuries. Policy-makers and regulatory entities need gender-specific data analyses such as the ones in this paper to align regulations and policies with gender gaps in healthy and safety. However, the U.S. Department of Labor failed to provide detailed gender-specific information in its occupational safety and health public database, and these limitations were addressed in the final sections of this paper.

A brief literature review on women's occupational safety and health is presented in the first section of this paper. We focused on nontraditional industries and gave more emphasis to construction occupations because all the authors of this paper have a background in the construction industry. Moreover, gendered studies are rarer in nontraditional research fields when compared to social sciences, for example. The second part of this paper focuses on the data analysis on gender-based fatal and nonfatal occupational injuries and workplace violence (WPV) documented from all industries using the most recent data published by the Bureau of Labor Statistics (BLS) and the Equal Employment Opportunity Commission (EEOC). The WPV data include homicides and nonfatal physical assaults. We analyzed the data according to the following characteristics: 1. Characteristics of injuries; 2. Characteristics of events; 3. Types of aggressors; and 4. Industrial sectors. The analyses are used to show the importance of separating detailed information on workplace safety and health hazards between female and male workers.

3. Women's participation in the labor force

The total labor force in the U.S. has dramatically increased because of the substantial growth of the female workforce after the 1960s (U.S. Department of Labor, 2002). The World Bank registered a similar rise globally, as women's participation in the workforce was raised by 126% between 1960 and 1997 (World Bank, 2001). Recent World Bank's data showed that women accounted for 44% of the estimated global working population in all sectors excluding agriculture. However, this number varied from countries to countries. The rate of female workers is as low as 13% in Qatar and Saudi Arabia, and as high as 54% in Latvia and Moldova. The United States ranked 36th position out of the 99 listed countries. The Bureau of Labor Statistics (BLS) predicted that by 2050, female workforce will rise from 68.6 million (2014) to 92 million (U.S. Department of Labor, 2002).

Although men and women have similar shares of the labor force in the U.S., the earnings among male workforce are generally higher than the women's for the same occupation (U.S. Department of Labor, 2015b). A full-time female employee earned 82% of the income compared with the equivalent full-time male employee in 2013 (U.S. Bureau of Labor Statistics, 2014a, 2014b). Because of this difference, women sometimes apply for blue collar, well-paid jobs. However, employers still avoid to recruit female workforce to nontraditional occupations such as construction, engineering, mining and transportation-related jobs.

4. Gender considerations in workplace safety

Workers of any gender are exposed to occupational safety and health risks. Such risks increase from increasing work intensity, repetitive movements, extreme temperatures, psychological stresses, and the presence of hazardous conditions. If a worker's condition changes (e.g. health issues and pregnancy), his or her potential workplace hazards can also increase. However, male and female have biological, psychological, and environmental vulnerability differences and thus, their bodies and minds respond differently to diverse conditions.

Despite such differences, it is relevant to state that gender alone does not determine safety and health hazards but the gender interaction with social, biological, and environmental factors (Messing & Ostlin, 2006). The types of exposures facing female and male also differ. For example, women's average body frame and size are generally smaller than men's. As a result, women were neglected by many ergonomic solutions and the size of personal protective equipment (PPE) and tools (NYCOSH, 2014). Additionally, men and women faced different types of psychological stresses. Women were subjected to more incidents of harassment and discrimination, especially in nontraditional occupations as some research highlighted (NYCOSH, 2014; Goldenhar & Sweeney, 1996; Sugerman et al., 1999). On the other hand, men and women are vulnerable to different types of toxins, men on toxins that affect sperm quality, while women those affecting pregnancy or breastfeeding (Sugerman et al., 1999; NYCOSH, 2014). Research also showed that female workers suffered from different types of occupational hazards (Hoskins, 2005). More importantly, policy-makers lack resources and research to address the needs of occupational safety and health for women. Sugerman et al. (1999) pointed out that the BLS would make a substantial contribution to the improvement of safety and health policies focused on women whether they published detailed gender-specific data.

Women also had their safety and health compromised by the male-female wage gap. Lower comparable wage has been cited as a source of stress among women, especially among single mothers (Messing & Ostlin, 2006). Women often venture into blue-collar jobs for better wages because of the low wage in occupations that traditionally hire women. Some examples include engineering, technicians and trades. While these higher paying occupations are more attractive and a diverse workforce is a positive change, the industries are not prepared to address the health and safety differences between the traditionally men workforce and women workforce. The health and safety gaps will become increasingly obvious as more women take up these occupations. "New" concerns, such as harassment and discrimination, may become key concerns, and there could be a shift from traditional physical safety and health issues to psychological stress and gender-specific productivity and job satisfaction related safety and health issues (Bond et al., 2004). Work related distractions and self-imposed injuries, and workplace violence (e.g. verbal threats, rapes, or physical assaults) could become more acute.

5. Workplace violence against women

The U.S. Department of Labor (2015a) found that the second leading cause of workplace non-fatal and fatal injuries behind transportation-related accidents in the United States is workplace violence (WPV). According to the BLS, 15,980 employees (67% female) have suffered trauma from nonfatal WPV in 2014 (Bureau of Labor Statistics, 2014). However, studies on WPV among women are extremely limited (Tiesman et al., 2012). There are four main WPV categories, namely, criminal intent (type I), customer/client (type II), co-worker (type III), and personal relations (type IV). Studies failed to analyze gender-specific data when found that "type IV" did not occur frequently in the job site (Tiesman et al., 2012). Tiesman et al. (2012) analyzed workplace homicides on female victims for all industries using 2003–2008 CFOI data and found that 33% of women were killed by personal relations (type IV) in the workplace, most of them in public buildings and parking lots. Yet less than 30% of the American employers have formal programs or policies that address workplace violence (U.S. Department of Labor, 2005). WPV not only represents a safety hazard for employees, but also a financial risk for employers. In 2014, 23% of the nonfatal WPV required more than 31 days away from work to recover (Bureau of Labor Statistics, 2014), and such lost days cost money to the businesses. For example, employers had to pay \$400 million dollars in 2002 due to direct and indirect costs of assaults and violent acts (CDC/NIOSH, 2006).

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