

Debra Gay Anderson, Ph.D., APRN, BC
Associate Professor
College of Nursing
University of Kentucky
Lexington, KY 40536-0232
danders@email.uky.edu

Risks for workplace violence in long-haul truckers

December 28, 2006

Deborah B. Reed, Ph.D. Co-Investigator
Steven Browning, Ph.D. Co-Investigator

National Institute of Occupational Safety and Health
R01 OH007931
9/30/02 – 9/29/06

Table of Contents

Title Page

Table of Contents

Abstract

Scientific Report

Publications

Selected Abstracts

Interim Reports

Gender/Ethnicity/BMI Tables

Financial Status

Raw Data

Risks for workplace violence in long-haul truckers

DG Anderson, Ph.D., APRN, BC, DB Reed, Ph.D. and S Browning, Ph.D. Co-Investigators

Seventeen workers are murdered each week in the U.S., and an estimated 33,000 workers per week are victims of non-fatal assault at the workplace (National Institute of Occupational Safety and Health, 2004). Sixteen percent of workplace homicides are perpetrated by an intimate partner (NIOSH, 2001). The purpose of this study was to investigate the incidence and distribution of workplace violence among female and male long-haul truck drivers and the effects of violence on their mental and physical health. The specific aims were to: (1) identify the types of violence that women and men experience while working as long-haul truck drivers; (2) identify risk factors that contribute to violence against truckers and between truckers; (3) differentiate the risks of work-related stress among distinct socio-demographic groups of truckers as they relate to specific exposures experienced by long-haul truck drivers; (4) determine the prevalence of domestic violence experienced by long-haul truck drivers when their driving partner is also their intimate partner; and (5) identify work environment factors that place truck drivers' safety at risk. The aims of this project were consistent with the Healthy People 2010 objectives that address the reduction of work-related homicides (Objective 20-5) and work-related assaults (Objective 20-6), and with the National Institute for Occupational Safety and Health National Occupational Research Agenda (NORA) Objectives. It also addressed types of violence identified by the Iowa Report to the Nation on Workplace Violence (2001). The project specifically focused on risk factors related to workplace violence in the long-haul trucking profession. A cross-sectional non-intervention design using both quantitative and qualitative methods were used to collect data. A quantitative survey was conducted with a non-probability sample ($N = 987$) recruited at truck shows and truck stops across the U.S. Data was collected on violence-related variables (e.g. harassment, weapons, assault, rape, robbery, worksite security, fatigue, psychological strain, and substance abuse). The findings will assist in the development of interventions to decrease the risk of exposure to violence in the long haul trucking industry. A sequential and staged approach to the analysis of the data is being pursued. Descriptive statistics have been compiled as appropriate for the level of measurement of the variables. Dependent on the specific aim, bivariate relationships, logistic regression, discriminant analysis, Cronbach's alpha, and ANCOVA will be used in additional analysis of the data. As data is analyzed, information will be submitted to NIOSH.

The participants ($N = 987$) had been long-haul truckers an average of 14 years;

- 64% were married;
- 38% had children under the age of 18 (of those, 37% had children who traveled with them);
- 87% had a high school education;
- 46% attended college;
- 91% were Caucasian;
- 12% ($n = 119$) did not have a residence outside of their truck;
- mean BMI for male truckers ($n = 797$) was 31.6;
- mean BMI for female truckers ($n = 174$) was 31.2;
- 34% of male truckers were overweight and 52% were obese;
- 26% of female truckers were overweight and 49% were obese;
- 73% of truckers feared for their personal safety at work;
- 88% had had their safety threatened while driving; and
- 44% carry weapons (24% carry guns and 57% carry knives).

Long-haul trucking is one of the fastest growing industries in the United States. Safety on the road, at truck stops, rest areas, and at pick-up and delivery sites is a primary concern for the truckers. In addition to safety related to violence on the job, truckers are also at risk for industry related injuries. As indicated in the findings the vast majority of truckers are overweight or obese, contributing to unintentional injuries and cardiovascular disease (R01 submitted). Finally, at least 12% of truckers surveyed do not have a residence outside of their truck leading us to question their access to health care and their ability to maintain healthy habits.

The results of this study will be distributed to both the scientific community and to the trucking industry, including popular radio programs listened to by truckers.

Risks for Workplace Violence in Long-Haul Truckers
Debra G. Anderson, PI, Deborah B. Reed, Co-I, Steve Browning, Co-I

1. Definition of Problem: The U.S. truck driving industry employs nearly nine million Americans. A significant subset (3.16) million of these workers consists of long-haul truck drivers (U.S. Bureau of Labor Statistics, 2001). The Bureau of Labor Statistics (BLS) rates truck driving as the third largest growth occupation (tied with Registered Nurses), with a projected growth of 561,000 jobs from 2000-2010 (Eisenburg, 2002). Only teachers and computer software engineers are estimated to be growing more quickly in numbers than truck drivers. This growth is affecting not only the number of long-haul drivers but also the gender make-up of the driver workforce. The number of women truckers has increased from an estimated 513 drivers in 1970 (Lembright, 1982) to between 174,000 and 290,000 (6-10%) currently (American Trucking Association, 1999; Renner, 1998). The overall size of this sector of the economy, and projections for its growth, coupled with the non-traditional aspects of long haul truckers' workplace environments and employment arrangements, underscores the importance of assessing this population in terms of workplace violence and the specific risk factors associated with long-haul truck driving.

Several studies have examined health risks of truckers (Bolster, 1989; Korelitz et al., 1993; Magnusson et al., 1996; Reed et al., 2000). One of the key issues revealed by these studies is the finding that truck drivers have more heart disease than any other occupations (Leigh & Miller, 1998). Stress is an identified risk factor for heart disease, however few studies have investigated violence and stress related to long-haul truckers. The existing research is further limited by the fact that the majority of studies among long-haul truck driving have used exclusively male samples (Gruber, 1976; Hakkanen, 2001; Ho et al., 1993; Korelitz et al., 1993; Patenaude et al., 2001). In light of the rapidly increasing number of female long-haul truckers, it is important to address their specific needs in addition to the needs of truck drivers in general.

From 1992-1996, the number of injuries and illnesses for all occupations decreased 20% while increasing 5% in truck drivers. In 1999, truck drivers had more workplace injuries and illnesses involving time away from work than any other occupation (Bureau of Labor Statistics, 2001) and heavy truck driving is one of the occupations with the most costs related to job-related injuries and illnesses (Leigh & Miller, 1997). It is important to determine the nature of these injuries and illnesses to enable the development of appropriate interventions to prevent them. Rates of workplace violence specifically for long-haul truckers are not available in the existing literature or from national surveys and agencies. One reason cited for the lack of national data is that, although truck hijackings are investigated by the federal bureau of investigation, personal crimes against truckers are generally handled by local authorities and are therefore not always reported to federal authorities (Strah, 1994). A crime bill signed by then President Clinton, in 1994, instructed federal authorities to work closely with state and local authorities (Strah, 1994). It also specified that prosecutors should aggressively prosecute crimes against truckers and that penalties for crimes against truckers should be more than

the maximum set by law. Truck driving is listed as one of the occupations that loses work time due to violence at the worksite (Toscano & Weber, 1995). A review of news articles also provides evidence of the dangers of truck driving (Campbell, 2000; Lockridge, 1994; Magner, 1999; Spencer, 2000; Strah, 1994). The National Crime Victimization Survey uses the occupational category of transportation workers, which includes taxi drivers, bus drivers, truckers, and other transportation industry workers. Based on data from this survey, workers in the transportation industry experienced average annual rates of aggravated assaults (3.5 per 1,000 persons) and simple assaults (10.2 per 1,000 persons) that ranked this industry fourth and sixth, respectively, in comparison to the other surveyed industries (Duhart, 2001). The transportation industry, in general, has the highest average annual rate of robberies in the workplace, as reported for the years 1993-1999 by the Bureau of Justice Statistics. Further, in comparison to other industries, the transportation industry has the largest percentage (31.7%) of workplace victims who were victimized by the offender with a weapon. Data from this survey suggest that a substantial proportion (63%) of the workplace victimization crimes for employees in the transportation field were not reported to the police. In general, rapes/sexual assaults and simple assaults tended to be severely underreported in the study population.

2. Aims of the project:

Aim 1: Identify the types of violence that women and men experience while working as long-haul truck drivers.

Aim 2: Identify risk factors that contribute to violence against truckers and between truckers.

Aim 3: Differentiate the risks of work-related stress among distinct socio-demographic groups of truckers as they relate to specific exposures experienced by long-haul truck drivers.

Aim 4: Determine the prevalence of domestic violence experienced by long-haul truck drivers when their driving partner is also their intimate partner.

Aim 5: Identify work environment factors that place truck drivers' safety at risk.

The aims of this project were consistent with the Healthy People 2010 objectives that address the reduction of work-related homicides (Objective 20-5) and work-related assaults (Objective 20-60) and with the National Institute for Occupational Safety and Health National Occupational Research Agenda (NORA) objectives. It also addressed the types of violence identified by the Iowa Report to the Nation on Workplace Violence (Loveless, 2001). The project specifically focused on types of workplace violence and risk factors related to that violence in the long-haul trucking profession.

3. Partners: Various truck shows and truck stops across the U.S. were used as sites for the collection of data.

4. Customers: Truck drivers, truck stops, trucking companies, delivery sites, and the justice system are potential users and beneficiaries of this project.

5. Approach: A cross-sectional design using both quantitative (Phase I) and qualitative methods (Phase II) were used to collect data from long-haul truck drivers. This multi-method approach should allow for the development of a strong conceptual understanding of violence at the workplace not available from the use of one method (Miles & Huberman, 1994). The qualitative data should be useful in validating, interpreting, clarifying and illustrating quantitative findings from the truckers. The different methods may yield different results because they are sensitive to different nuances (Patton, 2002). Combining quantitative and qualitative approaches in a process of methodological triangulation, will strengthen the data collection process (Patton, 2002) by allowing for the fullest possible descriptions of risks for violence in long-haul truckers.

A written survey was administered to a non-probability volunteer sample ($N = 987$) recruited at truck shows and truck stops to assess episodes of workplace violence and the circumstances surrounding the episodes of violence. Qualitative data was collected via phone interviews with a small sample of female and male participants who have completed the written survey and have identified themselves as having been a victim of workplace violence. The phone interview was conducted to assess in more detail the episodes of violence identified in the written surveys and to evaluate the context of those violent episodes. Unfortunately, the target of 60 interviews was not met as the truckers selected often were not available when contacted for follow up.

The target population for this study was female and male long-haul truck drivers. The inclusion criteria were: (a) commercial drivers who spend the majority of their work hours in long-haul trucking; (b) age 21 or older; and (c) ability to speak English. For the purpose of this study, long-haul trucking was limited to truckers who spend one or more nights per week away from home while driving. The age of 21 was used because many states require truckers to be at least 21 years of age to obtain a commercial driver's license. Length of time on the job was collected to assess potential differences in novice and experienced drivers. Because the measures in the study were not available in other languages, only English speaking truck drivers were included.

6. Results/Findings (Preliminary): The funding for this project concluded on September 29, 2006. Data analysis is ongoing, thus the findings discussed in this section are preliminary and may change based on more in-depth analysis.

- The participants ($N = 987$) had been long-haul truckers an average of 14 years;
- 64% were married;
- 38% had children under the age of 18 (of those, 37% had children who traveled with them);
- 87% had a high school education;

- 46% attended college;
- 91% were Caucasian;
- 12% (n = 119) did not have a residence outside of their truck;
- mean BMI for male truckers (n = 797) was 31.6;
- mean BMI for female truckers (n = 174) was 31.2;
- 34% of male truckers were overweight and 52% were obese;
- 26% of female truckers were overweight and 49% were obese;
- 73% of truckers feared for their personal safety at work;
- 88% had had their safety threatened while driving; and
- 44% carried weapons (Gun = 23.5%; Knife = 56.8%)

7. Outputs:

Heaton, K., Browning, S. and **Anderson, D.** (under review). Variables predicting falling asleep at the wheel in long-haul truckers. *Accident Analysis and Prevention*.

Heaton, K., Browning, S., & **Anderson, D. G.**, (under review). Epworth Sleepiness Scale. *Journal of Nursing Measurement*.

Anderson, D. G., Westneat, S., & Reed, D. (2005). Violence and stress in female long-haul truck drivers. *Security Journal*, 18 (2), 31-38. (*Pilot Study for NIOSH study – funded by NIOSH ERC*).

Anderson, D. G. (2004). Workplace violence in long-haul trucking: A review of the literature. *AAOHN Journal*, 52 (1), 23-27.

Conference Proceedings:

Anderson, D.G. and Reed, D.R. (2006). Risks for workplace violence in long-haul truckers. National Occupational Research Agenda (biennial meeting), Washington DC.

Allen-Bryant, K., Westneat, S., **Anderson, D.G.** (2006). Disparities in the Prevalence of Workplace Violence Among Long-Haul Truck Drivers, Southern Nursing Research Society, Memphis, TN.

Anderson, D.G., Reed, D.R., Lennie, T. & Westneat, S. (2006). Truckers and Nutrition. Southern Nursing Research Society, Memphis, TN.

Allen-Bryant, K., Westneat, S., **Anderson, D.G.** (2005). Disparities in the Prevalence of Workplace Violence Among Long-Haul Truck Drivers, American Public Health Association, Washington, DC.

Anderson, D. G., Westneat, S., & Kenworthy, E. (2005). Workplace violence in vulnerable occupations. Midwest Nursing Research Society, Cincinnati, OH.

Anderson, D. G., Westneat, S., Reed, D. (2005). Risks for Workplace Violence in Long-haul Truckers: Preliminary Data. NCIPC, Denver, CO.

Anderson, D. G., Westneat, S., & Reed, D., (2004). "Workplace Violence," for the 15th International Nursing Research Congress, Dublin, Ireland.

Riley, P. & **Anderson, D. G.** (2004). Data collection methods for workplace violence in long-haul truck drivers. Western Institute of Nursing, Portland, OR.

Anderson, D. G. (2004). Workplace violence in female long-haul truckers. Southern Nursing Research Society, Louisville, KY.

Anderson, D. G. (2004). Workplace violence in long-haul truckers. Southern Nursing Research Society, Louisville, KY.

Anderson, D. G., Allen, K., & Riley, P. (2003). Risks for workplace violence in long-haul truckers. American Public Health Association Annual Meeting. San Francisco, CA.

8. Outcomes: This project provides information that should be useful in improving safety at the worksites of truckers related to the design of truck stops, rest areas, delivery sites, and training of employees. In addition, findings unrelated to violence are also important, and include nutrition and housing status. We have submitted a proposal that focuses on the nutrition and injury of truckers partially due to our findings that 85% of truckers are obese or overweight – and other studies that indicate that overweight and obese lead to injury. Over 12 percent of truckers responded that they have no residence outside of their truck – this has implications for health care access, stability, and support systems.