Identifying Environmental Influences on Obesity Risk Factors of Commercial Truckers

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Study Purpose & Aims

- Purpose:
  - to examine the exercise and dietary habits in a sample of commercial truck drivers and
  - to examine various components of the work environment of commercial truck drivers in relation to their risk for obesity.
- Long-term goal: to decrease the risk of obesity in commercial truck drivers.
- Specific aims:
  - (1) to identify the key obesity risk factors for a convenience sample of commercial truck drivers;
  - (2) to describe the feasibility of regular exercise and healthy eating based on the opinions and experiences of a convenience sample of commercial truck drivers;
  - (3) to compare the availability of exercise rooms at truck stops by geographic regions of the country.

Definitions

- **Commercial truck drivers** - drivers who operate heavy trucks or tractor-trailers to transport goods over long distances (U.S. Department of Labor (USDL), Bureau of Labor Statistics (BLS), 2007).
  - It important to distinguish long-distance hauling from local hauling in that long-distance hauling requires the driver to spend nights away from home.

- **Obesity** - "weight that endangers health because of its high body fat relative to lean body mass" (RAND Corporation, 2007).

Background & Significance

- Obesity is a problem of epidemic proportions among American adults and the health consequences of this disease are serious.
- NORA has identified commercial truck driver health as a priority area of research.
- Previous studies suggest prevalence rates above the national average of overweight and obesity within the commercial truck driver population.
- Current studies in the literature looking at the health of truck drivers do not specifically ask about obesity, however, these studies do note the prevalence of several medical conditions that are related to obesity.

Background & Significance: Obesogenic Environment

- Defined as conditions in the physical, political, economic and socio-cultural environment that lead people to become excessively overweight.
- Food availability, portion size and high-fat diets are environmental factors promoting overeating (Hill & Peters, 1998).
- Studies have shown that "away from home eating", as in restaurants and fast food meals, are associated with a decrease in diet quality and an increase in weight gain (Bowman & Vinyard, 2004; Thompson, et al., 2004; McCrory, et al., 1999).
- Environments may restrict physical activity through such factors as access to safe recreation and accessibility of recreation facilities (Popkin, Duffey, & Gordon-Larsen, 2005).

Background & Significance: Truck Driver Health

- Prevalence of obesity in commercial truck drivers is higher than the national prevalence rates.
  - 82% among drivers, compared to 65% national rate (based on BMI) (Anderson, et al., 2006)

- Ergonomic Factors

Methods

- Surveyed a convenience sample of commercial truckers
- 300 participants recruited at 6 truck shows
- Inclusion criteria limited the participants to drivers who
  - (a) were age 23 years or older;
  - (b) spoke English;
  - (c) spent a minimum of two days on the road per week or eight days per month;
  - (d) had been working as a commercial truck driver for at least two years;
  - (e) were free of infection or other illness within the previous two weeks prior to enrollment;
  - (f) did not have an implanted cardiac pacemaker or other implanted medical device; and
  - (g) were not pregnant.
- Approval for the study was obtained from the University of Kentucky Institutional Review Board.

Methods Continued

- Participants completed survey at truck show. Average time per participant was 20 minutes.
- Participants were compensated a total of $5 and tote bag for their time and were given a written copy of their weight, height, BMI, and body fat percentage measurements.

Methods: Instruments

- Obesity Risk Factor Questionnaire
- Body Mass Index
- Body Fat Percentage
- Waist Circumference

Data Analysis

- All data was kept in password-protected files, organized in dated folders stored on the University of Kentucky's College of Nursing secure server.

- Data analyses were done using SPSS for Windows, version 16.0. Data analysis began by checking the data for completeness.

Study Limitations

- Since a convenience sample was used for this study, results cannot be generalized the whole commercial truck driver population.
  - However, findings from this study will add to the limited knowledge about commercial truck drivers.
- Obesity Risk Factor Questionnaire has not been psychometrically tested.
- Body Fat analysis could not be obtained for individuals over 300 pounds (n=36)

Results

- Age - average age was 47 years, ranging from 24 to 71 years.
- Gender - Most of the participants were male (86.3%).
- Race/Ethnicity - Most of the subjects were White (88.3%), followed by Black (3%), Hispanic (2.7%), Other (2.3%), Native American (2.0%), and Asian (1%).

Results

- BMI - 93.3% had a BMI >25; Mean BMI=34.5 kg/m^2 (SD, 7.1)).

BMI	Number	Percentage
Underweight (<18.5)	0	0
Normal (18.5-24.9)	20	7%
Overweight (25-29.9)	61	20%
Obesity I (30-34.9)	90	30%
Obesity II (35-39.9)	68	23%
Obesity III (>40	61	20%

Results

- BMI + Waist Circumference - 93% of the participants were at Increased to Extremely high risk for type 2 diabetes, hypertension, and cardiovascular disease
  - Increased risk=10%;
  - High risk=11.3%;
  - Very high risk=51%;
  - Extremely high risk=20.7%

Results

- Body Fat Percentage - Nearly 80% of the study group (*n*=264) had a High (20.3%) or Very high (58.7%) percentage based on their age and gender
  - (scale was unable to measure body fat in those who weight was higher than 300 pounds).

Body Fat Interpretation	Number (n=264)	Percentage
Low	2	<1%
Normal	25	9%
High	61	23%
Very High	176	67%

Results

- Health Conditions:
  - Survey queried on 7 health conditions
  - 28% (n=164) reported at least 1 condition
    - While 28% (n=83) reported 2 or more conditions
  - Leading conditions were:
    - Back problems (*n*=67, 22.3%)
    - Hypertension (*n*=60, 20%)

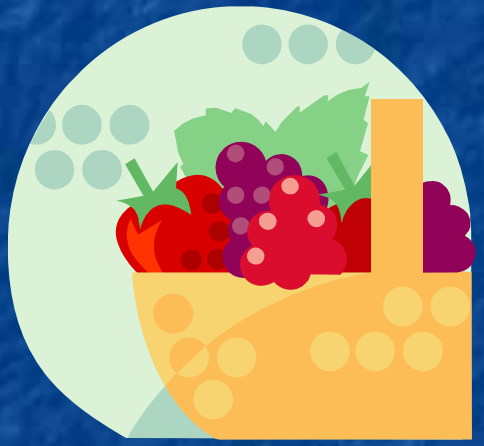
Results: Physical Activity

- Nearly 75% percent of participants rated the exercise environment in a typical work week as Never available/Terrible (32%) or Usually not available/Bad (40%).
- Nearly 75 percent of participants reported that exercise equipment was not available while on the road.
- When exercise equipment was available, most responders said they never use it (59.7%) or used it Some of the time (30.7%). Only 4.3 percent said they used it Always, and 4.7 percent selected Most of the time.
- The most popular reason selected for not using available equipment was Not enough time (71%), followed by It cost too much (6.3%) and I can't use due to my health (2%).
- Most drivers (59%) surveyed said they would use an exercise room with weight-lifting equipment and aerobic machines if they were available at truck stops (I don't know=26%; No=14%).
- Most participants said it was easier to exercise at home than while traveling (72.7%).

Results: Nutrition

- Five questions on the survey asked participants about the kinds of food they ate the previous day.

- Questions included a guide of what a serving size was (for example, one serving of fruit is one piece the size of a tennis ball). Most participants had no servings of fruit (38.7%), two servings of vegetables (30.3%) one serving of whole grains (36%), no servings of French fries or chips (51.7%), and no servings of cookies or cake (53.3%).



Results: Nutrition Cont.

- Most drivers ate 1-4 meals from a fast-food or sit-down restaurant in the past 7 days (48%).
  - Some drivers (3.3%) reported having over 21 meals (averaging 3 meals a day) from such places in the past 7 days.
- Most drivers replied that they would eat healthy foods if they were easily available to them while on the road (85%).

Conclusions

- Overall, this study showed that commercial truck drivers work in an environment that does not promote a healthy lifestyle.
  - This study found a very high prevalence of overweight and obesity among commercial truck drivers, of whom most are at increased risk for developing Type 2 diabetes, hypertension, and cardiovascular disease.

Conclusions

- Drivers reported not exercising regularly and not eating the recommended amounts of fruits, vegetables, and whole grains.
- Unless a driver packs his or her own exercise equipment, accessing a place to exercise on the road is not easily accomplished.
- Likewise, although some drivers can store and cook food in their truck, and can buy fruits and vegetables, they said it was difficult to store food and cook in their truck and had limited healthy options at restaurants they frequented.
- This study adds to the limited knowledge of the health and lifestyle behaviors of commercial truck drivers.

Impact

- By learning more about commercial truck driver's risk for obesity and about the obesogenic environment surrounding commercial truck drivers, appropriate nursing interventions can be developed that reduce drivers' risk for obesity.
  - Such interventions may include policy changes by trucking companies, increasing the availability of exercise equipment at truck stops, and providing nutrition & exercise education at truck stops.
- Since no previous research has been done on this topic, this study will add to the limited knowledge regarding the health of commercial truckers.
- This research could potentially be broadened to other professions. A variety of professions exist in which the workers environment influences their risk for obesity. For example, airline pilots.

Future Plans

- Future analysis of this data:
  - Development of a model to identify obesity risk factors in commercial truck drivers.
  - Develop Barriers/Promoters Scales for healthy lifestyle behaviors for commercial truck drivers
- Future studies
  - Survey truck stops and trucking companies to determine and compare by geographic region the availability of exercise rooms while traveling.
  - Develop and test intervention to increase physical activity and improve diet of drivers.

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Questions

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Main Menu

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