

Upper-extremity musculoskeletal disorders and poor quality of life among low-wage workers in North Carolina.

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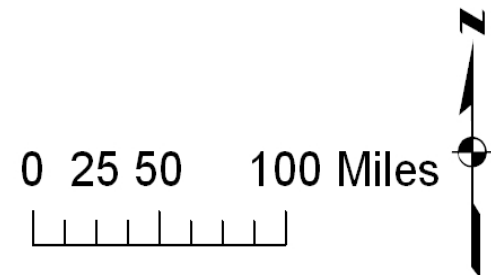
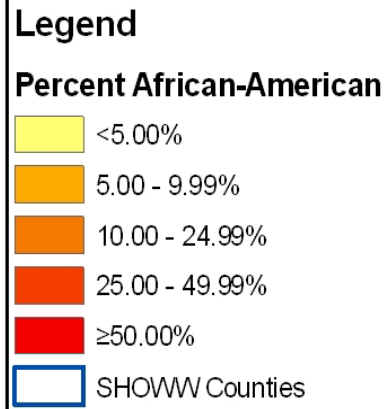
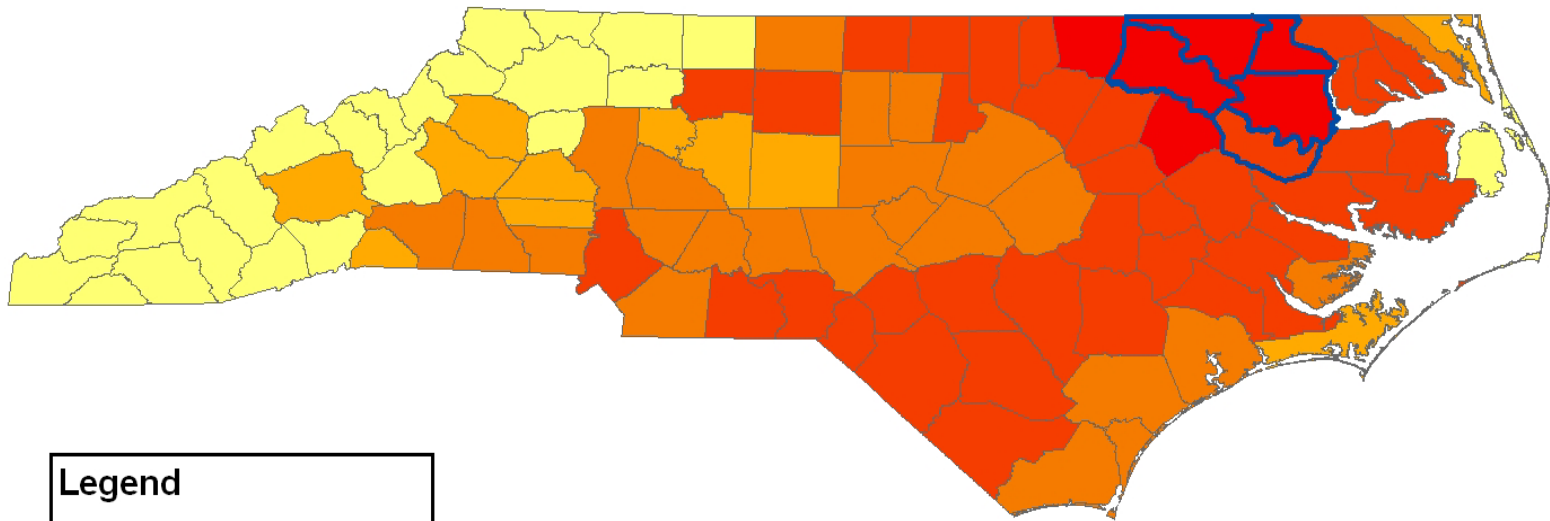
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Northeastern North Carolina

- ✿ Economically depressed area
 - ✿ Few Jobs
- ✿ Very Rural
- ✿ High Percentage African-American
- ✿ Poultry Processing employs ~2500

Figure 1: North Carolina African-American Population.*



*Source: US Census Bureau (2000).



SHOWW: Safety and Health of Working Women

- ✿ Process began in 1999
 - ✿ African-American women from community approached Duke University about examining health effects of poultry processing work.
- ✿ Community-based participatory research
 - ✿ “A *collaborative* approach to research that equitably involves all partners in the research process and recognizes the *unique strengths* that each brings.”

W.K. Kellogg Foundation. Community Health Scholars Program definition.
Retrieved from <http://www.sph.umich.edu/chsp/program/index.shtml>, October 22, 2007



Workers identified health effects

- ✿ Upper-extremity musculoskeletal problems
- ✿ Negative impact on physical and mental quality of life

Lipscomb et al., 2007.



Research Design

- ✿ 5 trained African-American community members
 - ✿ Interviews carried out: 590 women
 - ▾ May 2002 - March 2004
 - ✿ Recruitment by
 - ▾ Word of mouth
 - ▾ Networking
 - ✿ Interviews held at
 - ▾ Community office
 - ▾ Participant homes
 - ▾ Other convenient locations



No Industry Involvement

- ✿ Encourage worker confidence/comfort
- ✿ Poor occupational health history of industry
 - ✿ NC OSHA
 - ✿ Cited for repetitive motion violations
 - ✿ Failure to document injuries
 - ✿ NIOSH
 - ✿ 36% of workers interviewed reported repetitive motion injuries
 - ✿ 50-70% turnover annually



SHOWW: Baseline cross-sectional analysis

- ✿ To examine the predictive capacity of moderate to severe upper-extremity musculoskeletal disorders on low physical health related quality of life (HRQOL) among low-wage workers.

Study Population-Baseline

- ✿ 291 Poultry Processing Workers
 - ✿ Mostly new to poultry work (≤ 9 months)
- ✿ 299 Community Comparison Workers
 - ✿ Employed as
 - ✿ Retail workers (22.4%)
 - ✿ Nurses' aides (22.4%)
 - ✿ Fast food (13.4%)
 - ✿ Clerical (13.0%)
- ✿ Mean age = 31.4 years
- ✿ Race/ethnicity = 98.3% African-American

Lipscomb et al., 2007



Physical Health Related Quality of Life

✿ “[Physical] health related quality of life indicators usually encompass a person’s ability to function effectively physically, emotionally, and socially and to and to maintain a sense of well-being.”

-Lerner, DJ et al., 1994



Physical Health Related Quality of Life

- ✿ Using validated SF-12 short form
- ✿ 0 -100 scale
- ✿ Asks about “what respondents are able to do, how they feel and how they evaluate their health status.”

(Ware et al., 1996)

Physical Health Related Quality of Life

✿ Poultry workers

✿ Median score = 51.1 (Mean = 49.4)

✿ Community comparison group

✿ Median score = 54.8 (Mean = 52.6)

✿ National average ages **45-54** = 50

✿ **OUTCOME: lowest quartile HRQOL (≤ 48.2)**

The ALS CARE Program, 2006

Main Exposure

- ✿ Upper-extremity musculoskeletal disorders
 - ✿ During last 12 months
 - ✿ ≥ 3 episodes of symptoms
 - Lasting 1 week or longer
 - ✿ Severity 3-5 on scale of 1-5
 - ✿ Moderate to Severe vs. mild or none
- ✿ Includes hand/wrist, elbows, shoulder, and neck symptoms

Covariates

- ✿ Age (mean: 31.4 years, range 18-61)
- ✿ Other chronic disease
 - ♣ (Poultry: 38.1%, Comparison: 35.4%)
- ✿ Ever smoked
 - ♣ (Poultry: 32.3%, Comparison: 17.7%)
- ✿ 2 or more children in the home
 - ♣ (Poultry: 51.6%, Comparison: 44.1%)

Covariates (cont)

- ✿ Another adult at home to help
 - ✿ (Poultry: 60.1%, Comparison: 66.6%)
- ✿ “Survival” <1 week without a paycheck
 - ✿ (Poultry: 62.2%, Comparison: 59.8%)
- ✿ Often/always physically exhausted at the end of the work day
 - ✿ (Poultry: 63.4%, Comparison: 35.1%)

Crude Results

- ✿ Prevalence of moderate to severe UEMSD symptoms in past 12 months
 - ✿ Poultry processing workers
 - ▾ 34.4%
 - ✿ Community comparison group
 - ▾ 10.7%
- ✿ Poultry workers were **3.2 times** more likely to have had moderate to severe UEMSD symptoms in the past year.

Crude Results (cont)

- ✿ Prevalence of lowest quartile of physical health related quality of life
 - ✿ Poultry processing workers
 - ✿ 35.5%
 - ✿ Community comparison group
 - ✿ 14.7%
- ✿ Poultry Workers were **2.4 times** more likely to have low physical HRQOL

Predictive Capacity: Crude Model

- ✿ Capacity of UEMSDs to predict low HRQOL
 - ✿ Poultry processing workers
 - ✿ PR 2.18 (1.61 - 2.94)
 - ✿ Community comparison group
 - ✿ PR 5.25 (3.23 - 8.52)
- ✿ UEMSDs are significantly ($p < 0.001$) predictive of low HRQOL in both groups.

Predictive Capacity: Adjusted Model

- ✿ Adjusted for age and other chronic disease.
 - ✿ Poultry Processing Workers
 - ▾ PR 1.99 (1.45 - 2.74)
 - ✿ Community Comparison Group
 - ▾ PR 4.35 (2.55 - 7.44)

- ✿ UEMSDs are significantly ($p < 0.001$) predictive of low HRQOL in both groups.

Conclusions

- ✿ UEMSDs and low HRQOL are a tremendous problem in this population of vulnerable workers
- ✿ Higher prevalence of UEMSDs & low HRQOL among poultry workers
 - ✿ Suggests poultry workers have HRQOL compromised by work environment

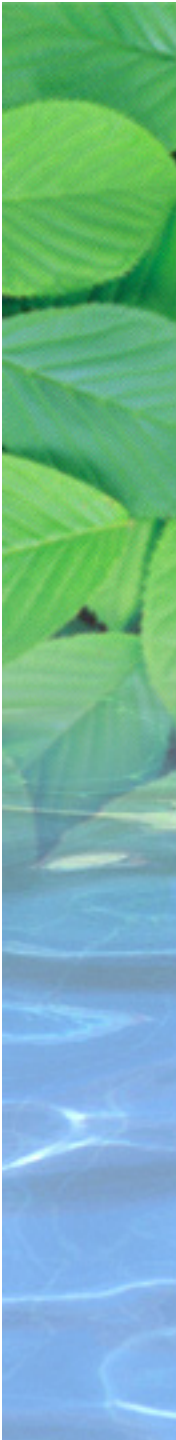
Conclusions (cont)

- ✿ UEMSDs strongly predict low HRQOL among all low-wage workers
 - ✿ Stronger effect in community comparison group
 - ✿ Why??



Conclusions (cont)

- ✿ CBPR design was vital to the success of the study



“When I come home, and I be hurting they [children] were sad. “ Mama you don’t need to go to work at the plant, you hurting like that.”

“It upset them that I be hurting ‘cause I would go home and lay down, and they be saying “ you need to find another job. ‘Cause you always be come home hurting.” And I would say that I had to hang in there ‘cause I had to pay the bills, so they can go to school and everything.”

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References

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