West Virginia University
Injury Control Research Center

# Exploring Social Contexts at Work:

## Effects of family ties & workgroup size on teen construction worker safety


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# Our Purpose…

- To look at factors not typically considered in studies of young worker injury risk
- Injuries happen because work is dangerous
- Can the social context affect how dangerous work is?

# Social Context of the Workplace

- Family ties - “family-firm connection”

  *Works in a firm either owned by parents/family member or where their family member also works*

- Workgroup size

  *Number of co-workers who work on the job site*

# Why important for Safety?

## Family Ties

- Social networks/connections important
- In construction, very important for:
  - *gaining access to jobs*
  - *assistance on the job*
- Family networks are especially important for youth
  - *finding employment*
- Are they important for safety once on the job?

# Why important for Safety?

## Family Ties

- Deferential treatment by supervisors & co-workers
  - *not assigning dangerous tasks*
  - *giving more careful instruction*
  - *watching them more closely*
- Family members may do so too
- Results in fewer exposures and better safety practices *(e.g., training and supervision)*

***No empirical evidence to support this***

# Why important for Safety?

## Workgroup Size

Smaller workgroups…

- Work in closer proximity to others = greater social contact
  - *increased monitoring of tasks*
  - *assistance and instruction*
  - *encouragement to use safety practices (e.g., PPE)*
- Results in fewer exposures and better safety practices *(e.g., supervision, training )*

***No studies have looked at the effect of workgroup size on young worker safety***

# Research Question…

Are youth who have a family-firm connection,

- or -

who work on job sites with small workgroups,

exposed to fewer hazards

and greater safety practices?

# Methodology

## Data Source

Study of youth working in construction, NC, USA
*(Runyan, C, UNC IPRC)*

- Cross-sectional data
- Telephone interviews
- 187 teens in North Carolina, USA
- Ages 14-17
- Work permit for construction

# Methodology

## Independent Variables

- Family-firm connection
  - *Worked for firm owned by family member or, where family member also worked*
- Workgroup size
  - *# of co-workers usually present on the worksite*
  - *Dichotomized into*

    **≤10 workers / 11-50 workers**

# Methodology

## Dependent Variables

- Hazardous Exposures
  - Using equipment and performing tasks - dangerous
    - *9 equipment items (forklift, nail gun, saws)*
    - *7 task items (heavy lifting, outside helper on vehicle)*

# Methodology

## Dependent Variables

- Safety practices
  - Supervision
    - *Work is checked more than once per day*
    - *Never works completely alone*
  - Training
    - *Any training from employer*
    - *6 safety topics*
  - Personal Protective Equipment Use
    - *8 items (e.g., hard hat, safety goggles, gloves)*

# Sample Characteristics

**Demographics**

- 98% male
- 90% ages 16 or 17
- 88% white

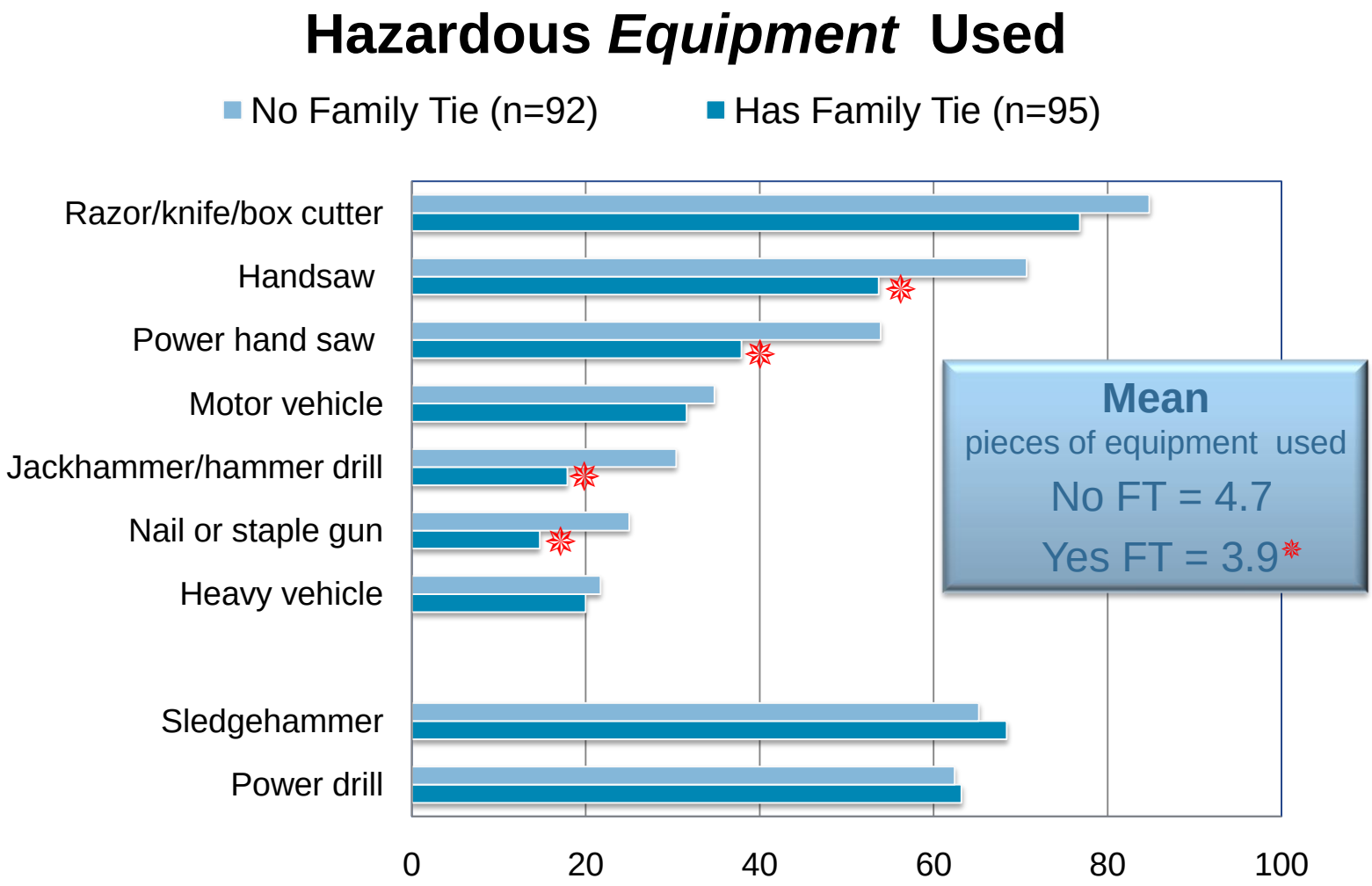
**Work characteristics**

- 51% with family-firm connection
- 88% small workgroup (≤10 workers on site)

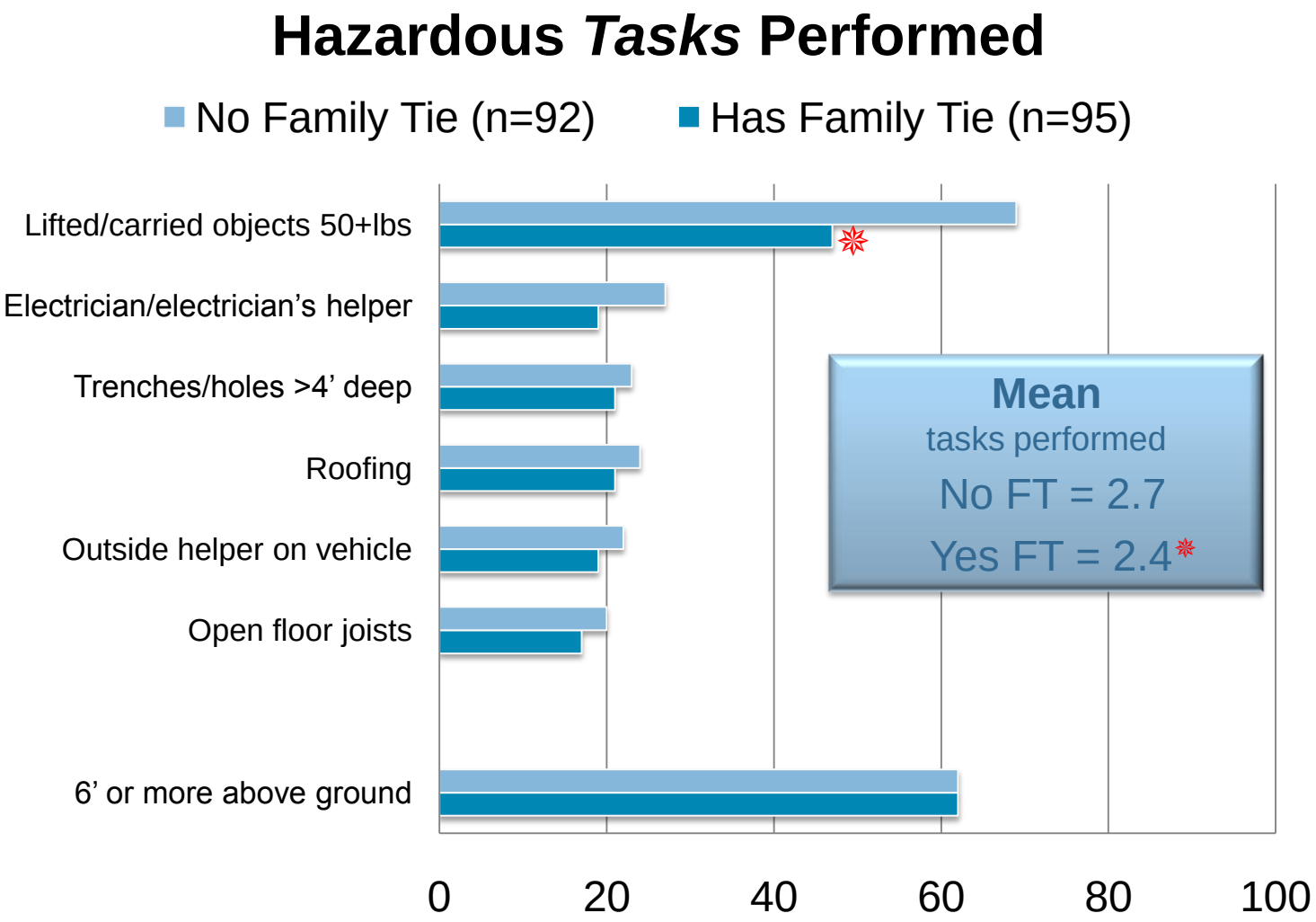
# RESULTS

## *FAMILY-FIRM CONNECTION*

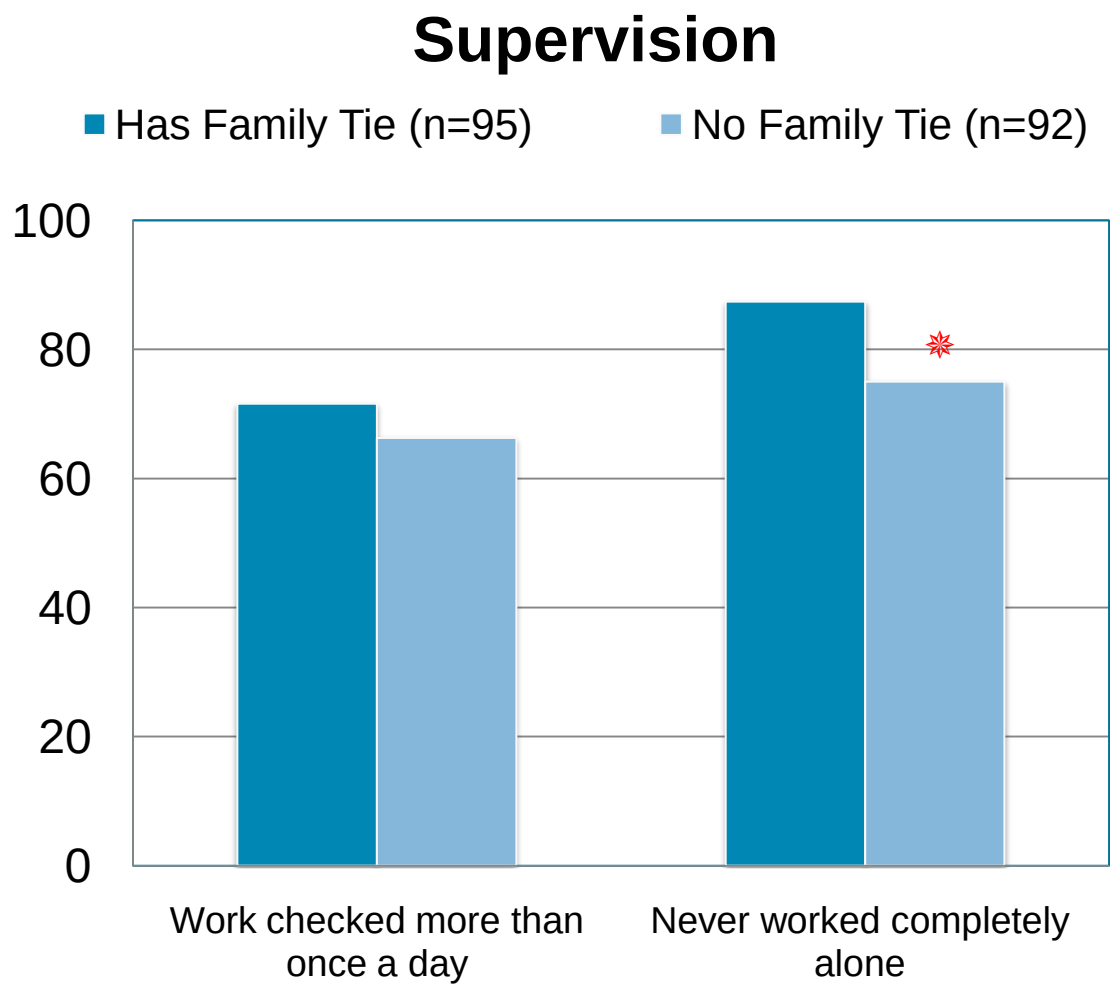
# Results - *Hazardous Exposures*



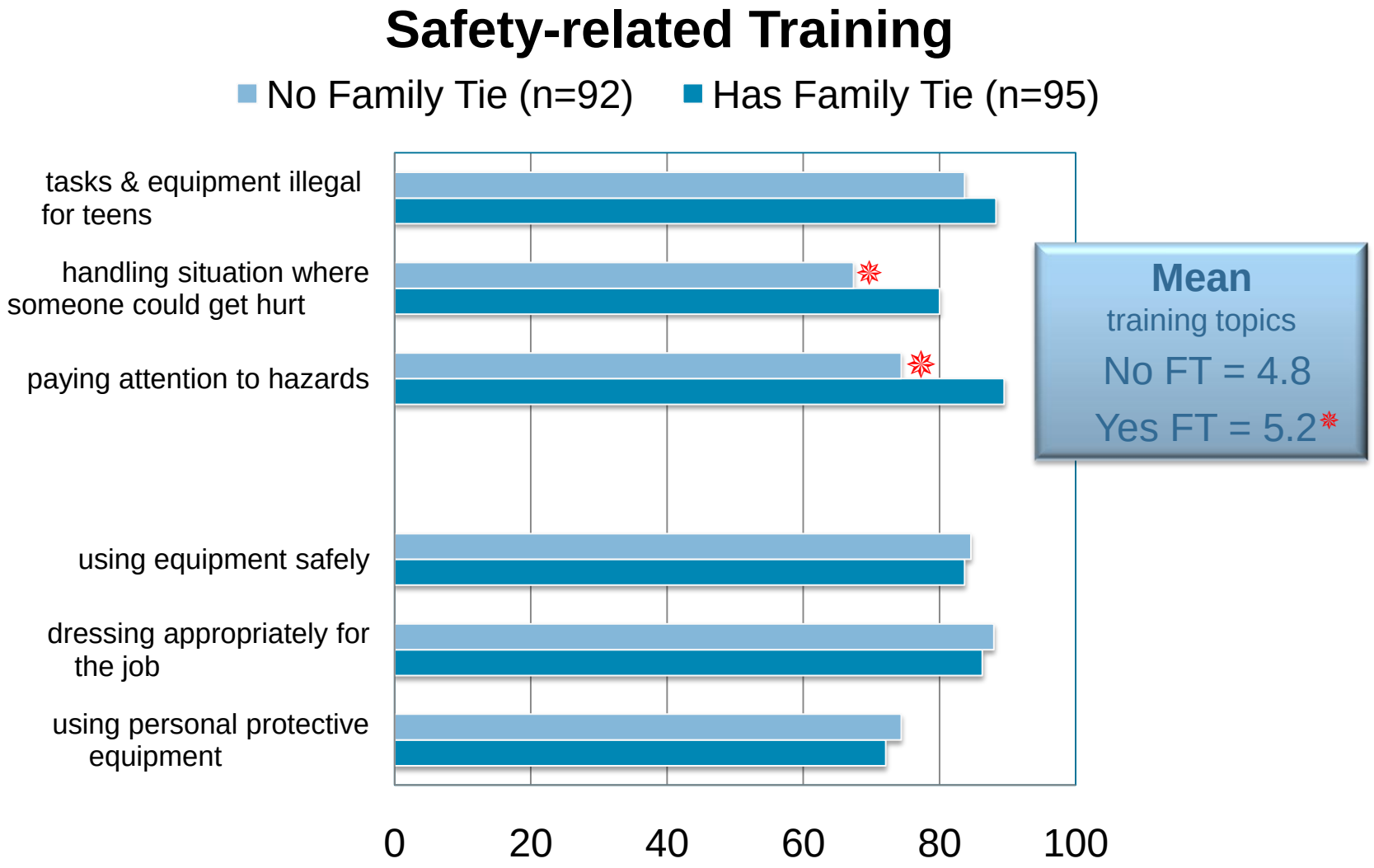
# Results - *Hazardous Exposures*



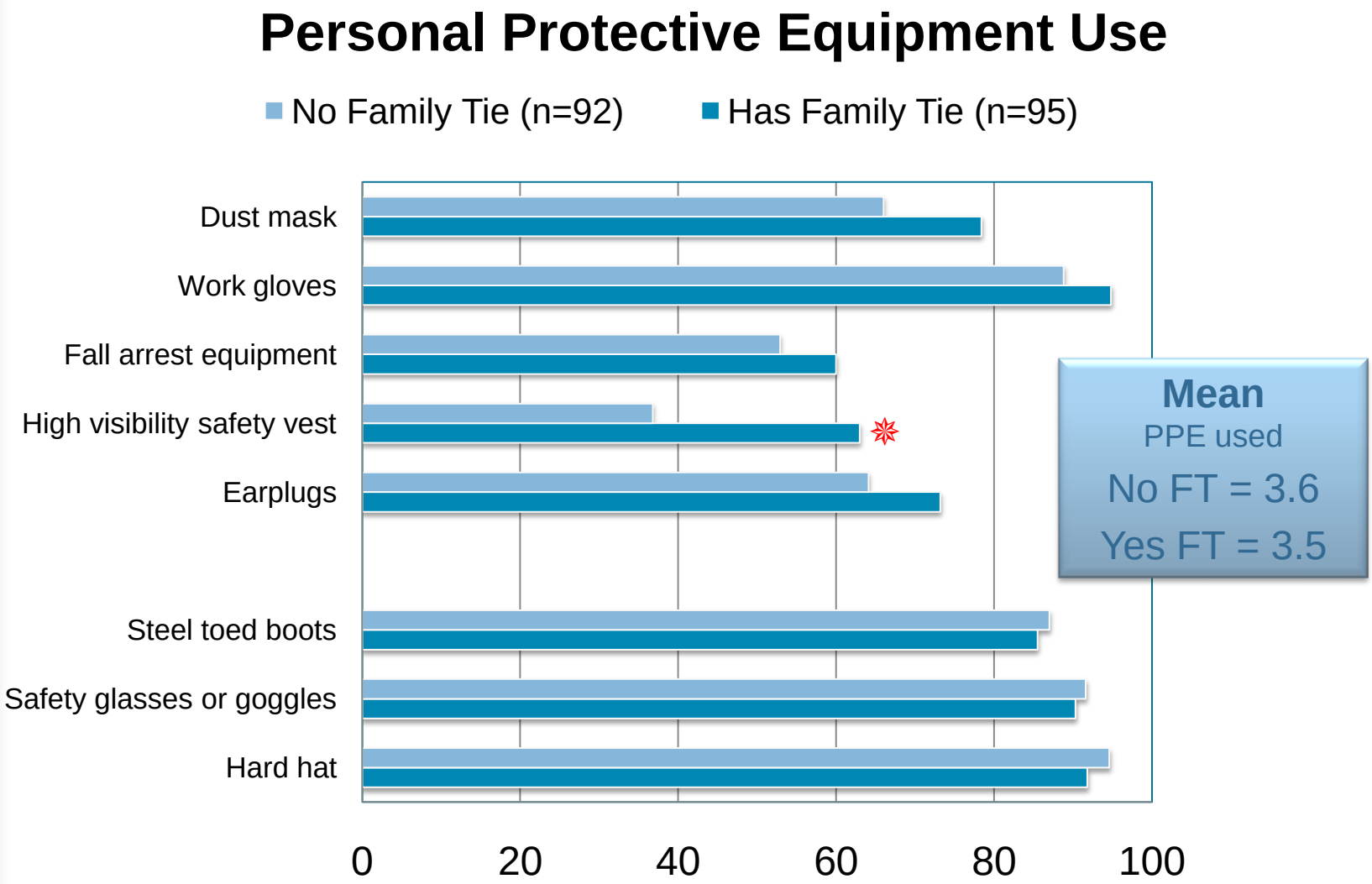
# Results - *Safety Practices*



# Results - *Safety Practices*



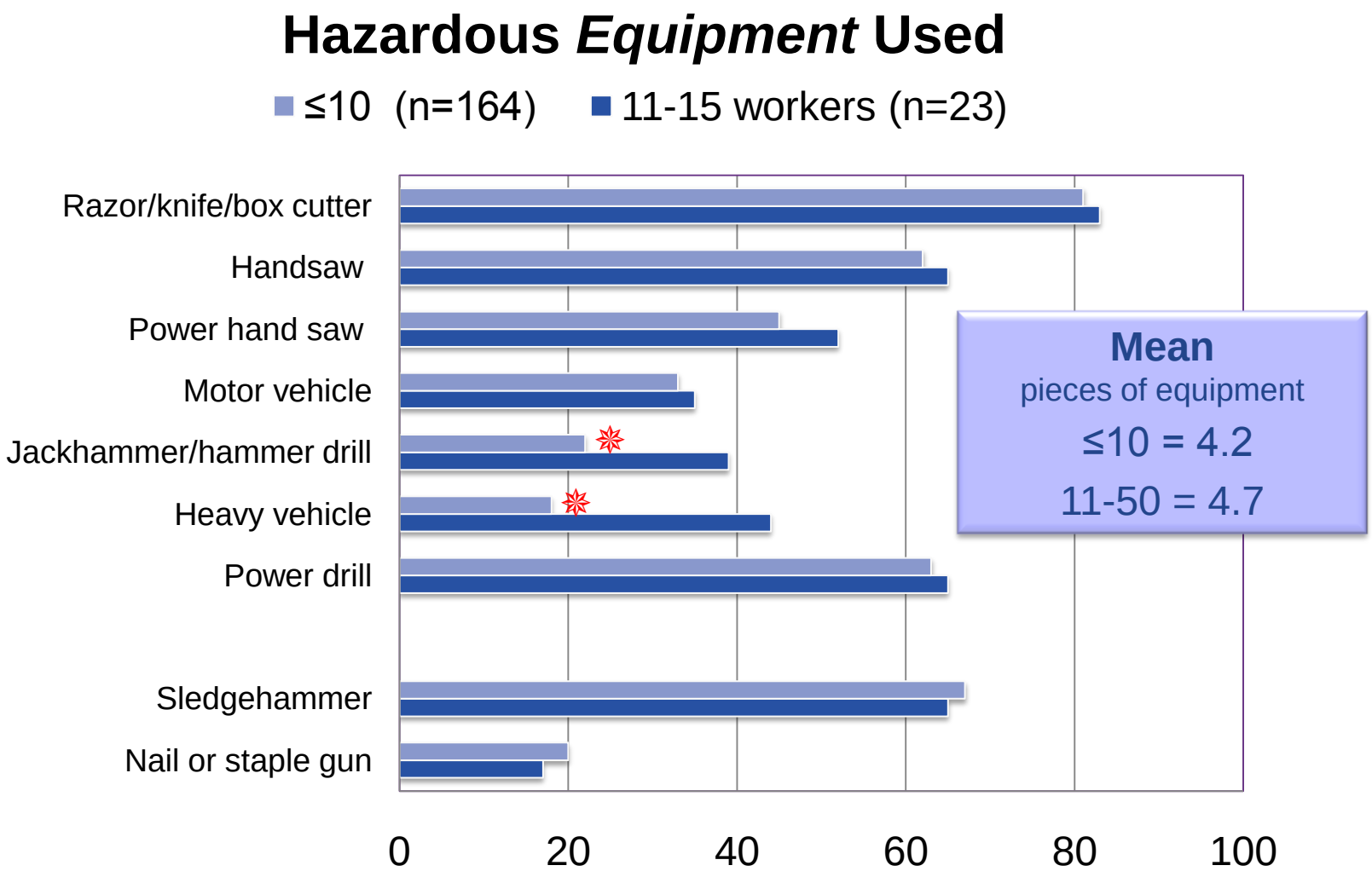
# Results – *Safety Practices*



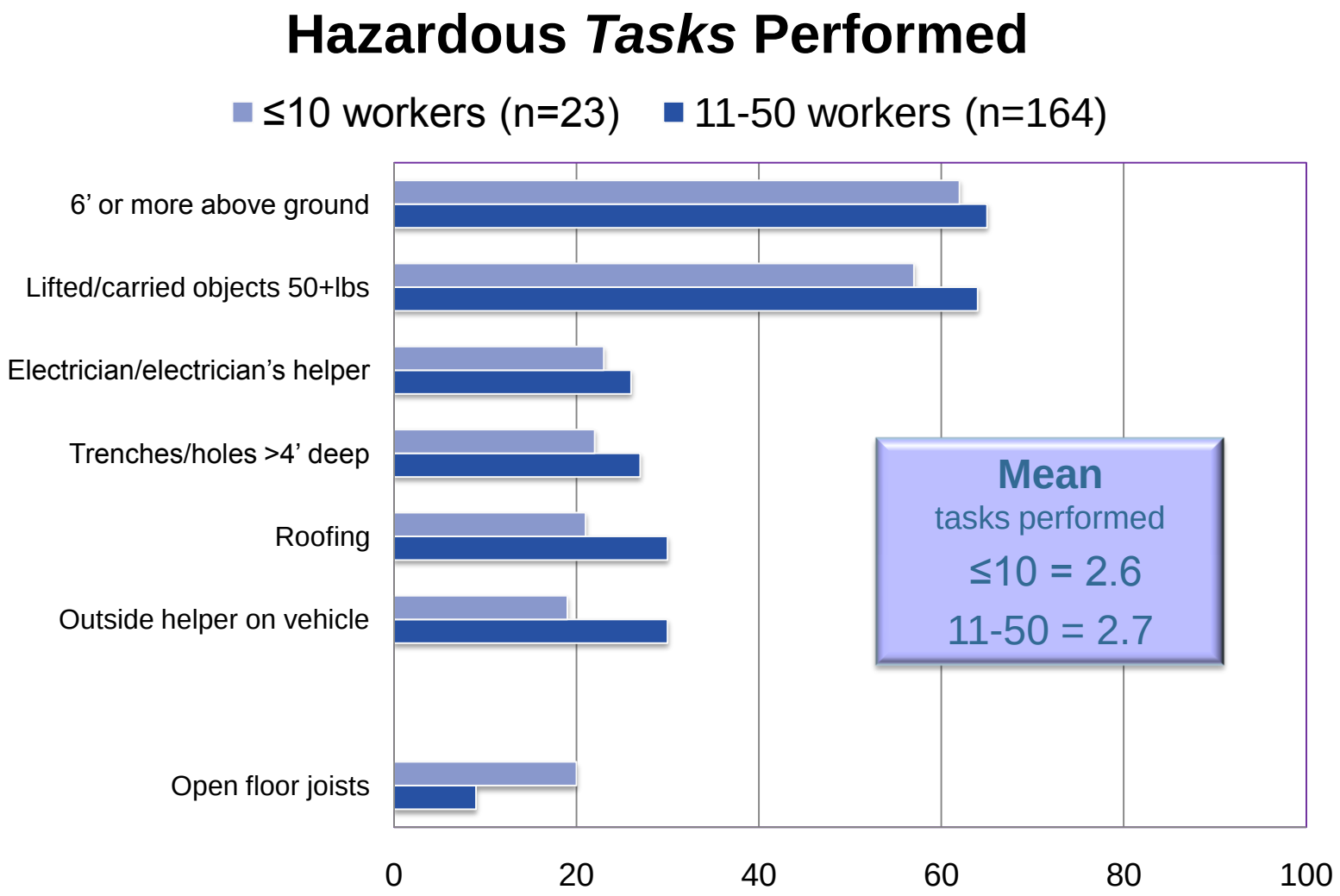
# RESULTS

## *WORKGROUP SIZE*

# Results - *Hazardous Exposures*



# Results - *Hazardous Exposures*



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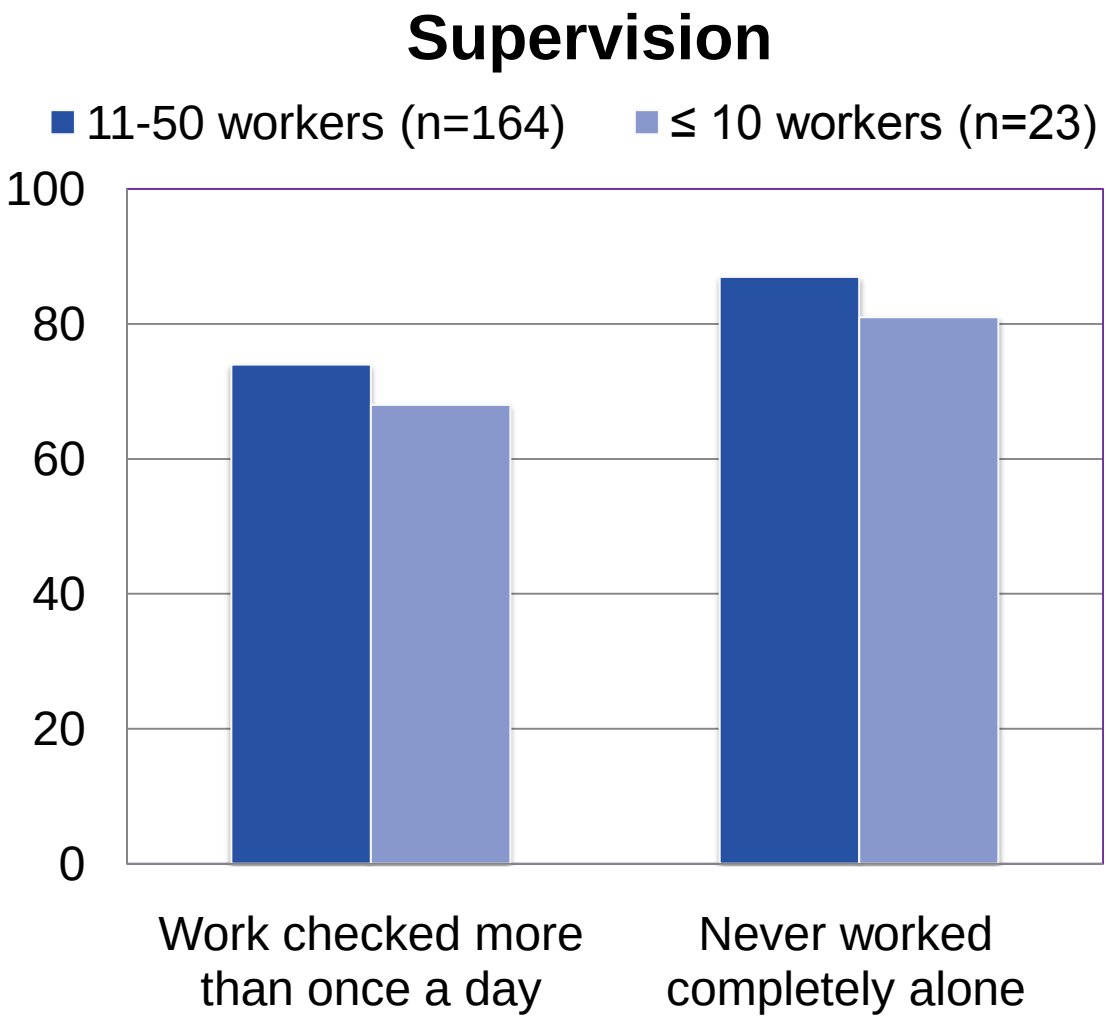

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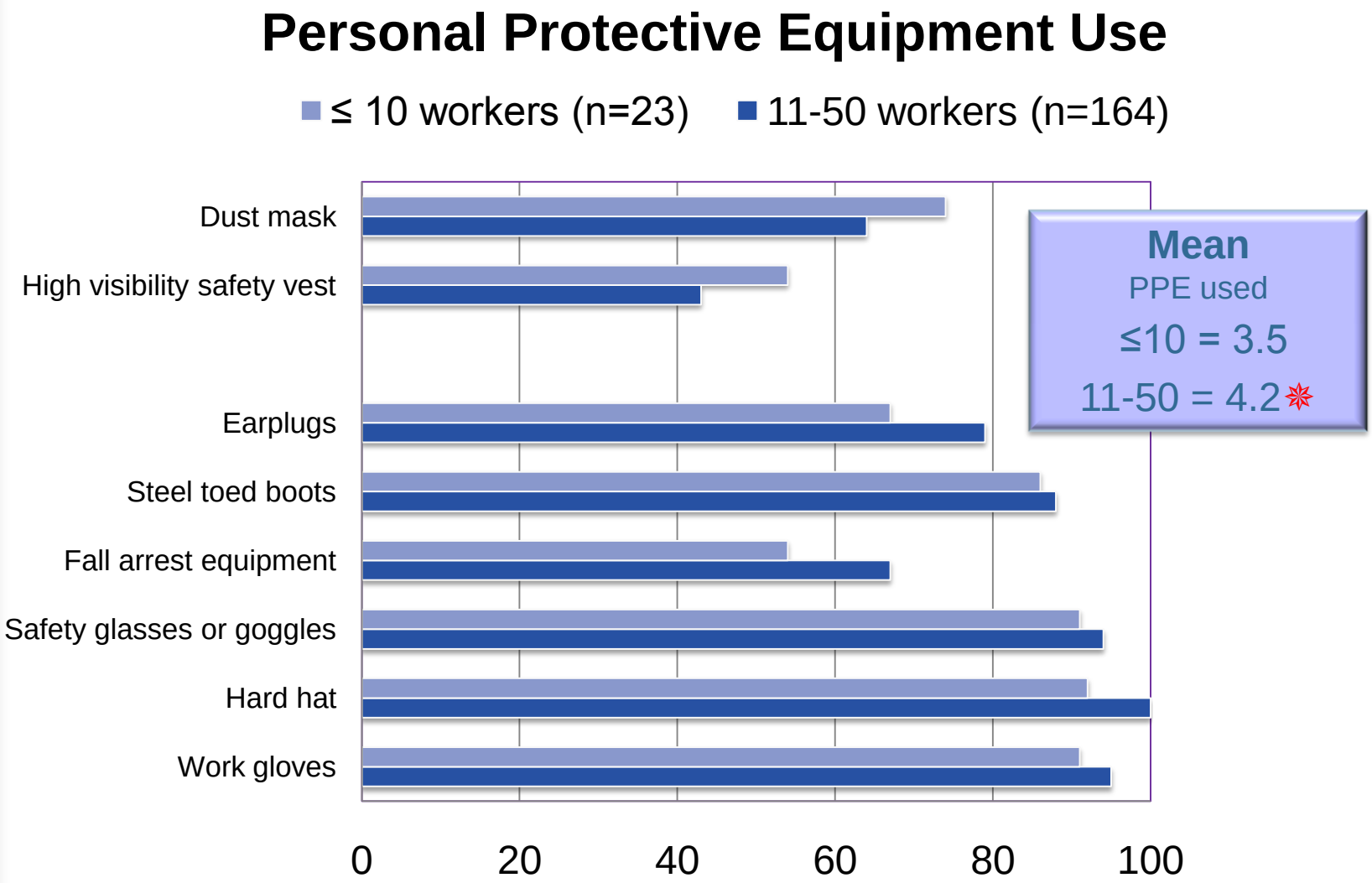
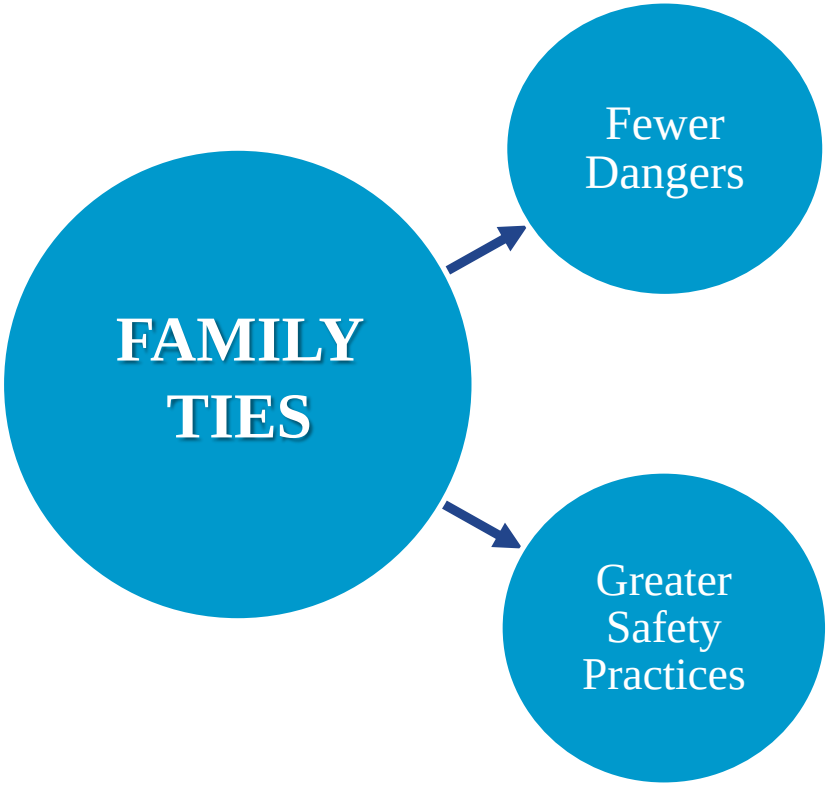


# CONCLUSIONS

# Conclusion - *Family Ties*

Youth with **FAMILY-FIRM TIES** report:

- using fewer pieces of dangerous equipment;
- performing fewer dangerous tasks;
- being less likely to work completely alone
- receiving more safety training




All significant findings

# Conclusions - *Workgroup Size*

- Few significant differences
  - Small cell sizes (n=23 in large workgroups)
- Patterns found in Small Workgroups
  - Exposure to Dangers
    - *Equipment (7 of 9 less often)*
    - *Tasks (6 of 7 less often)*
  - Safety Practices
    - *Safety Training Topics (5 of 6 less often)*
    - *PPE Use (6 of 8)*
    - *Not in the hypothesized direction*
      - *(Firm size effect?)*

# Strengths & Limitations

- Small cell sizes
  - Unable to detect differences in workgroup size
  - Patterns found are suggestive
- Weak measure of family ties
  - Very mixed, doesn't tell us the nature of the tie
  - Significant associations still found

# Next Steps…

- Confirm protective effect of Family ties in larger study
- Develop & test better measures of family-firm connection
- Investigate whether the association exists in other workplaces
- Evidence suggestive of a workgroup size effect – warrants further study

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Thank you!