

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

- Differential 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)

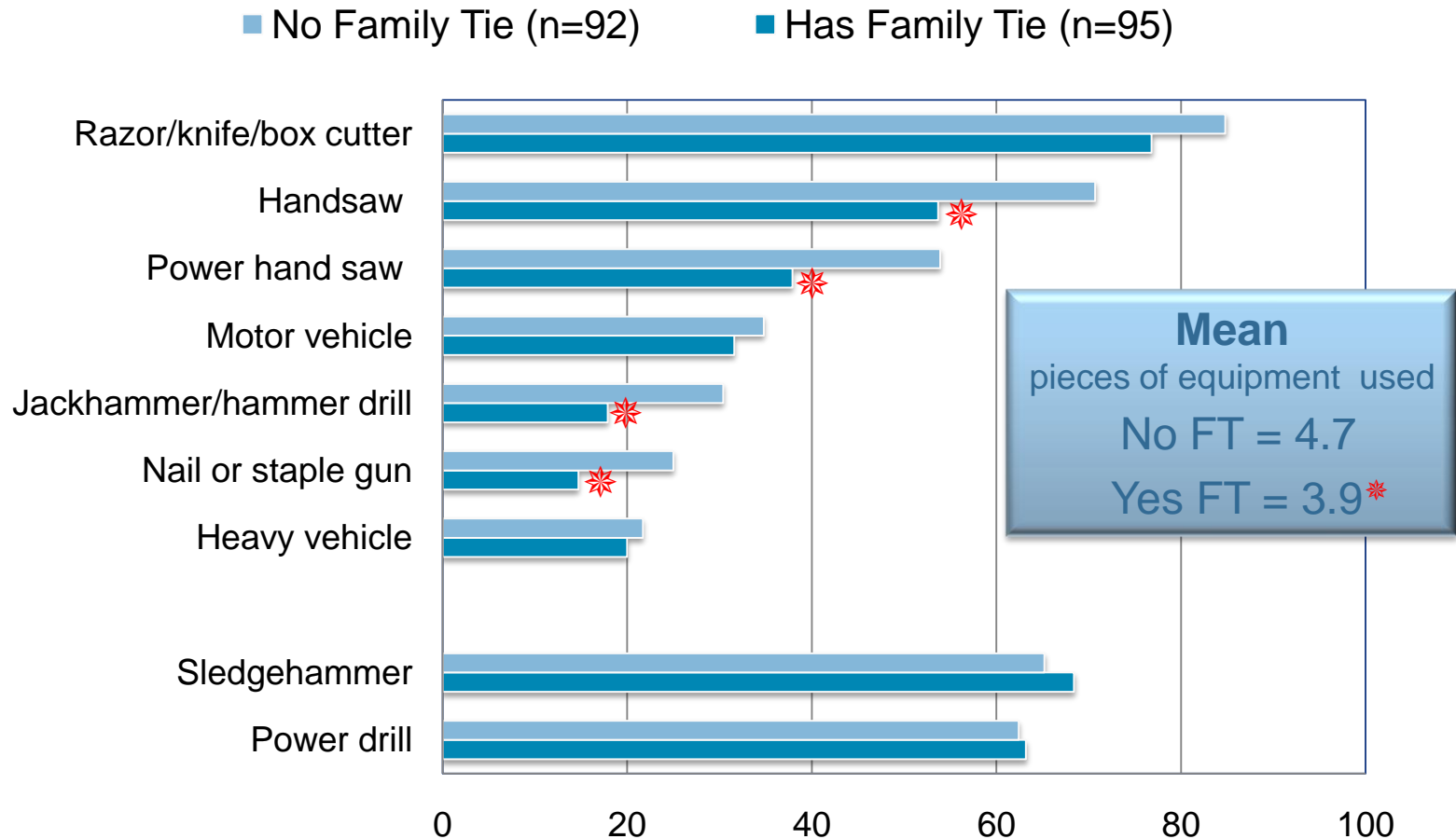
RESULTS



FAMILY-FIRM CONNECTION

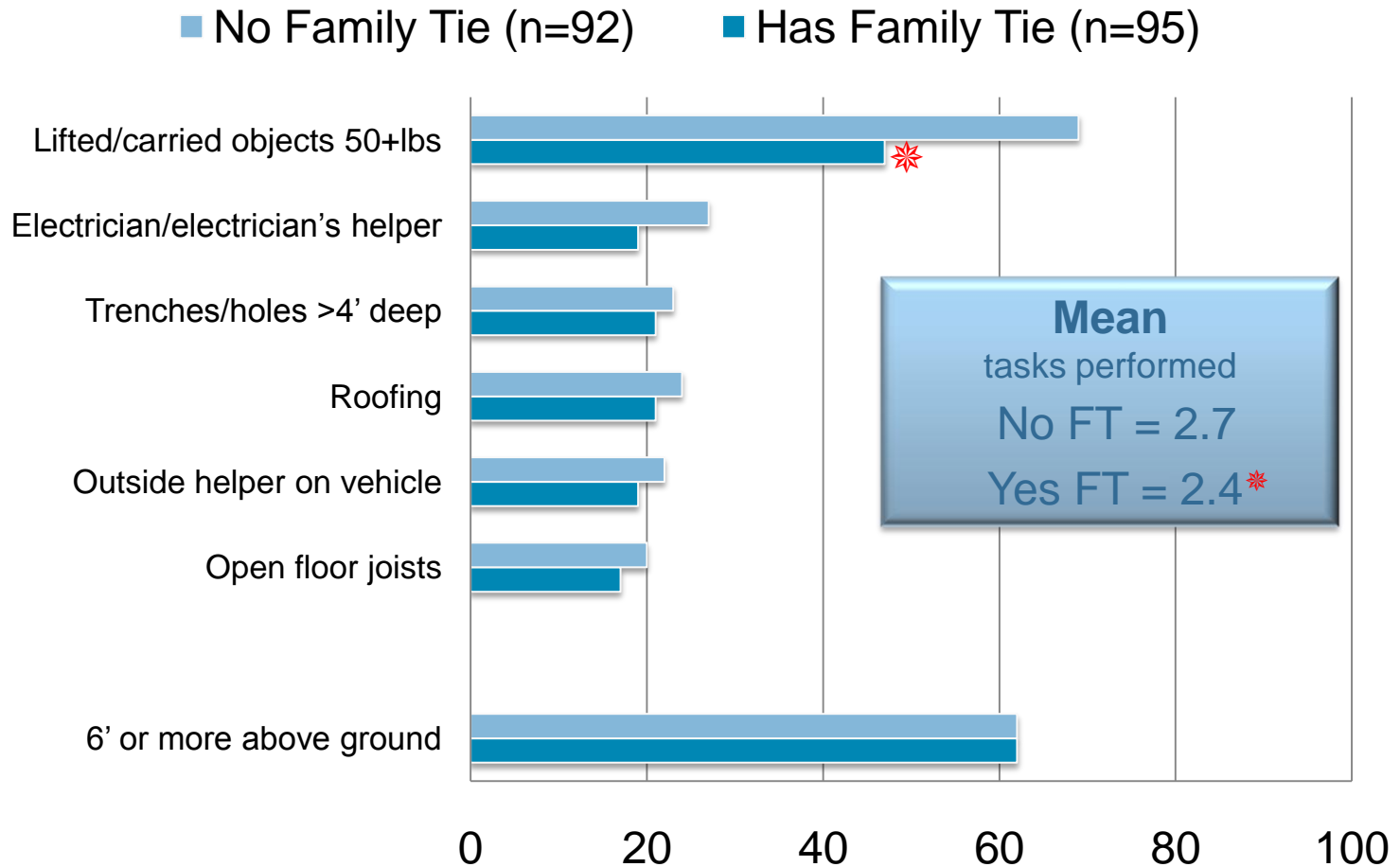
Results - Hazardous Exposures

Hazardous Equipment Used



Results - Hazardous Exposures

Hazardous Tasks Performed



Results - *Safety Practices*

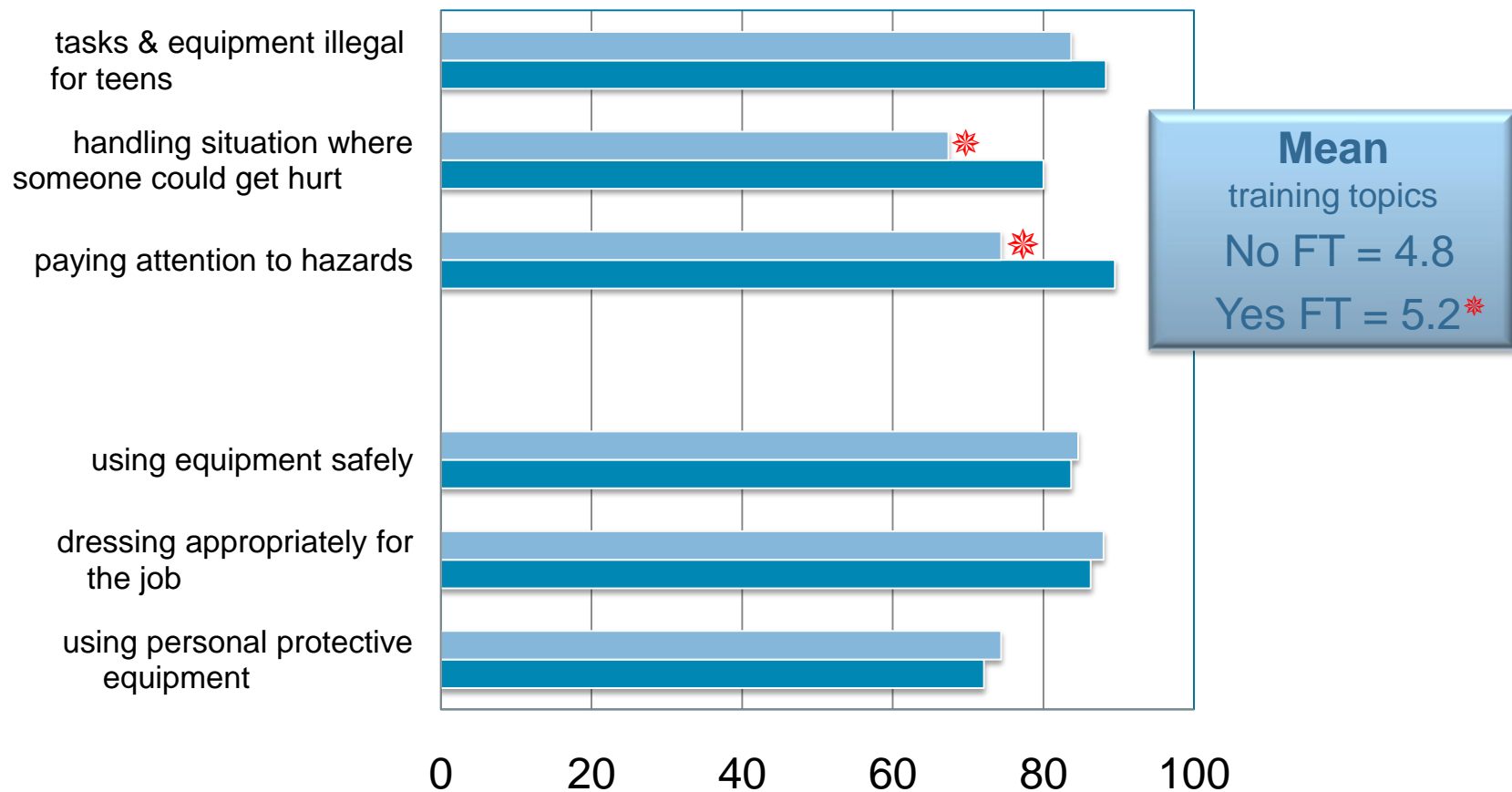
Supervision



Results - *Safety Practices*

Safety-related Training

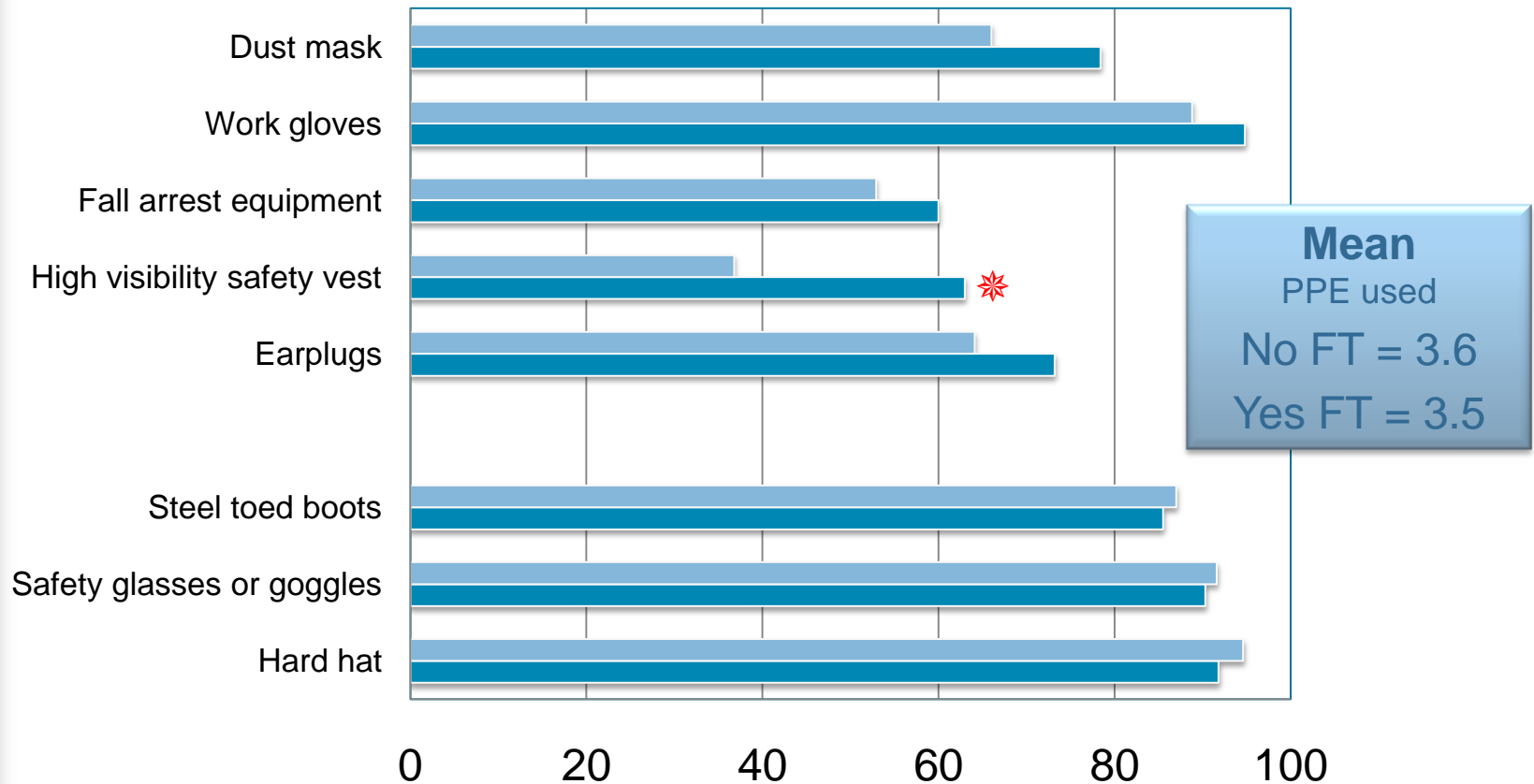
■ No Family Tie (n=92) ■ Has Family Tie (n=95)



Results – *Safety Practices*

Personal Protective Equipment Use

■ No Family Tie (n=92) ■ Has Family Tie (n=95)



RESULTS

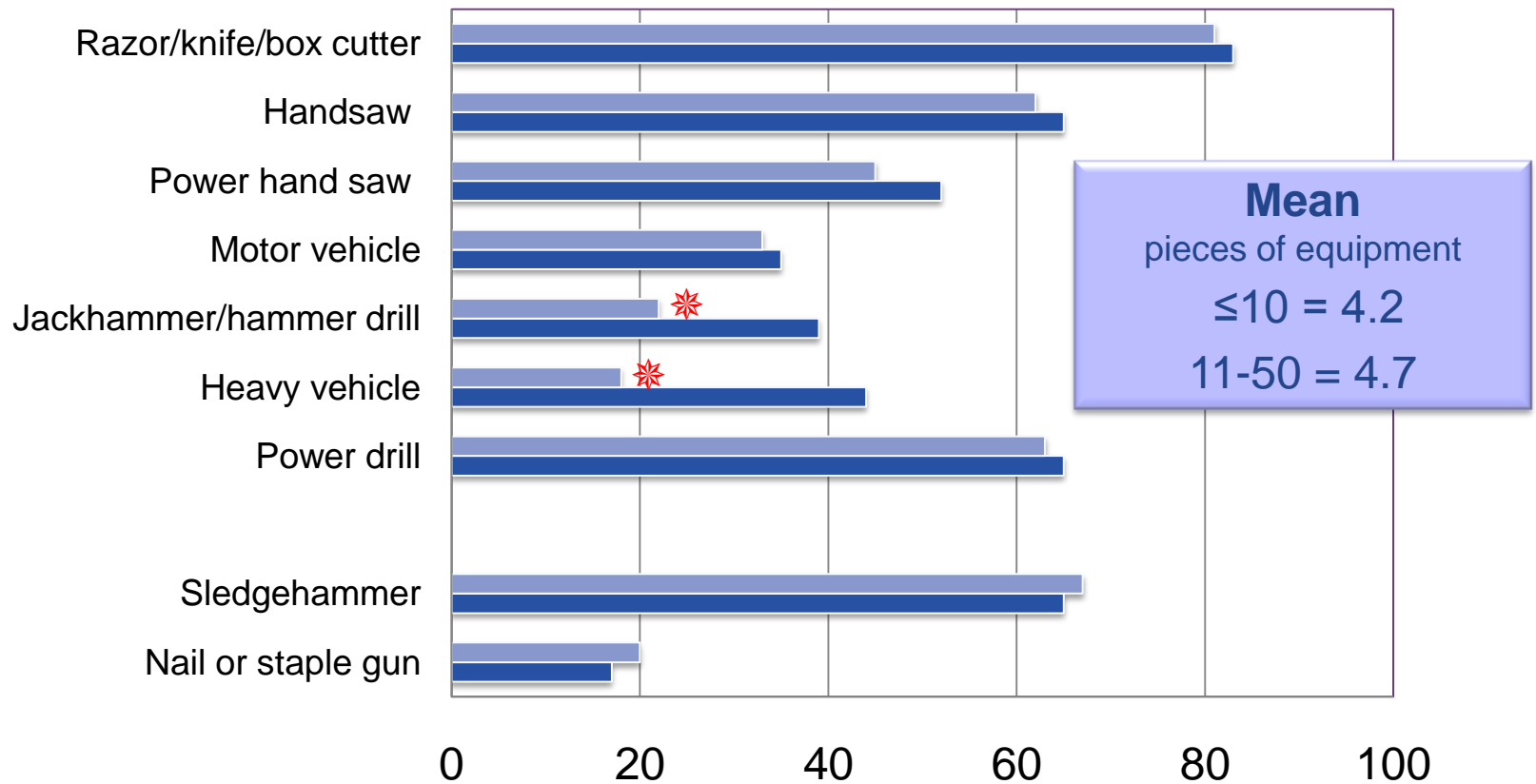


WORKGROUP SIZE

Results - Hazardous Exposures

Hazardous Equipment Used

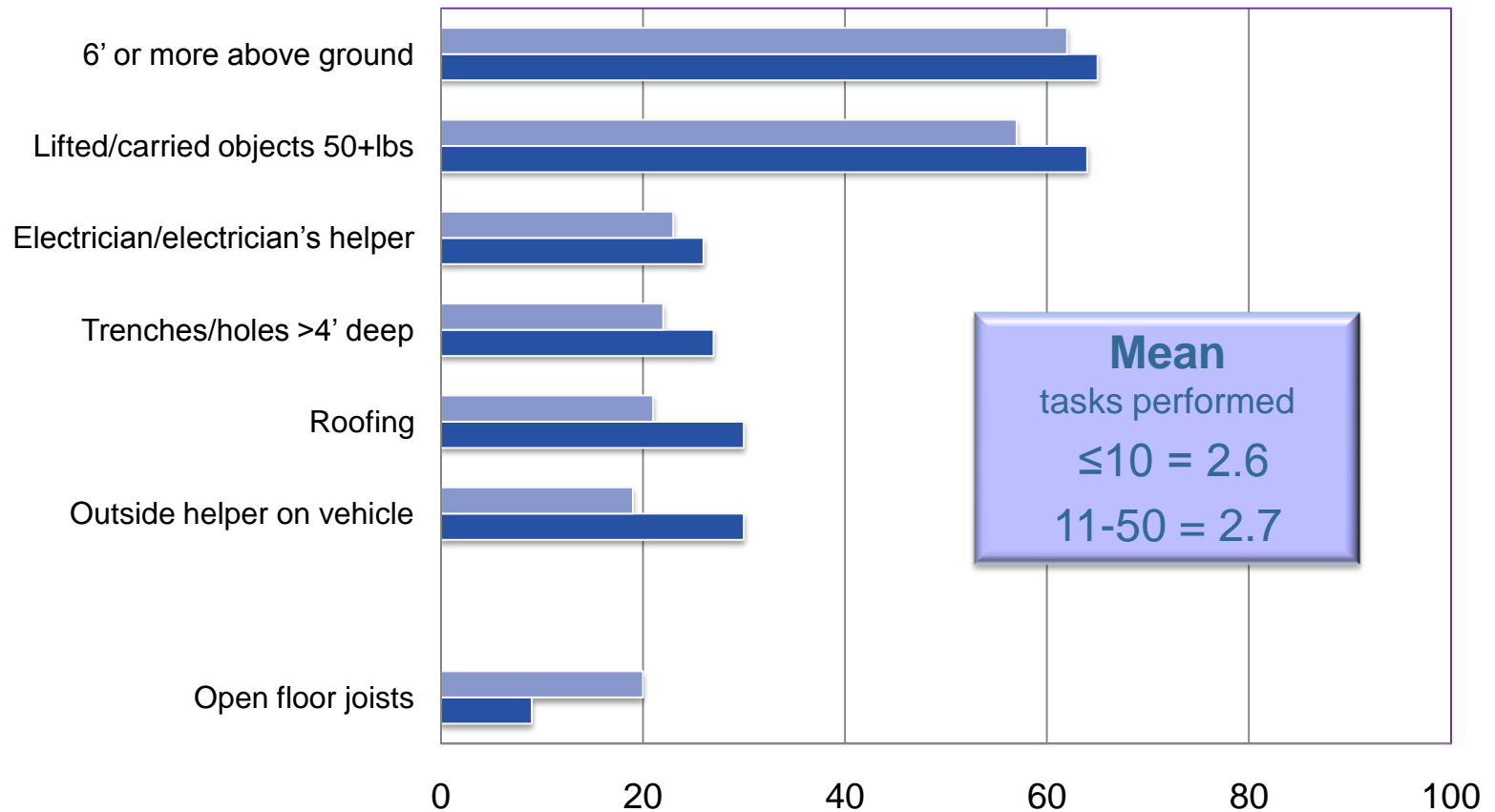
■ ≤10 (n=164) ■ 11-15 workers (n=23)



Results - Hazardous Exposures

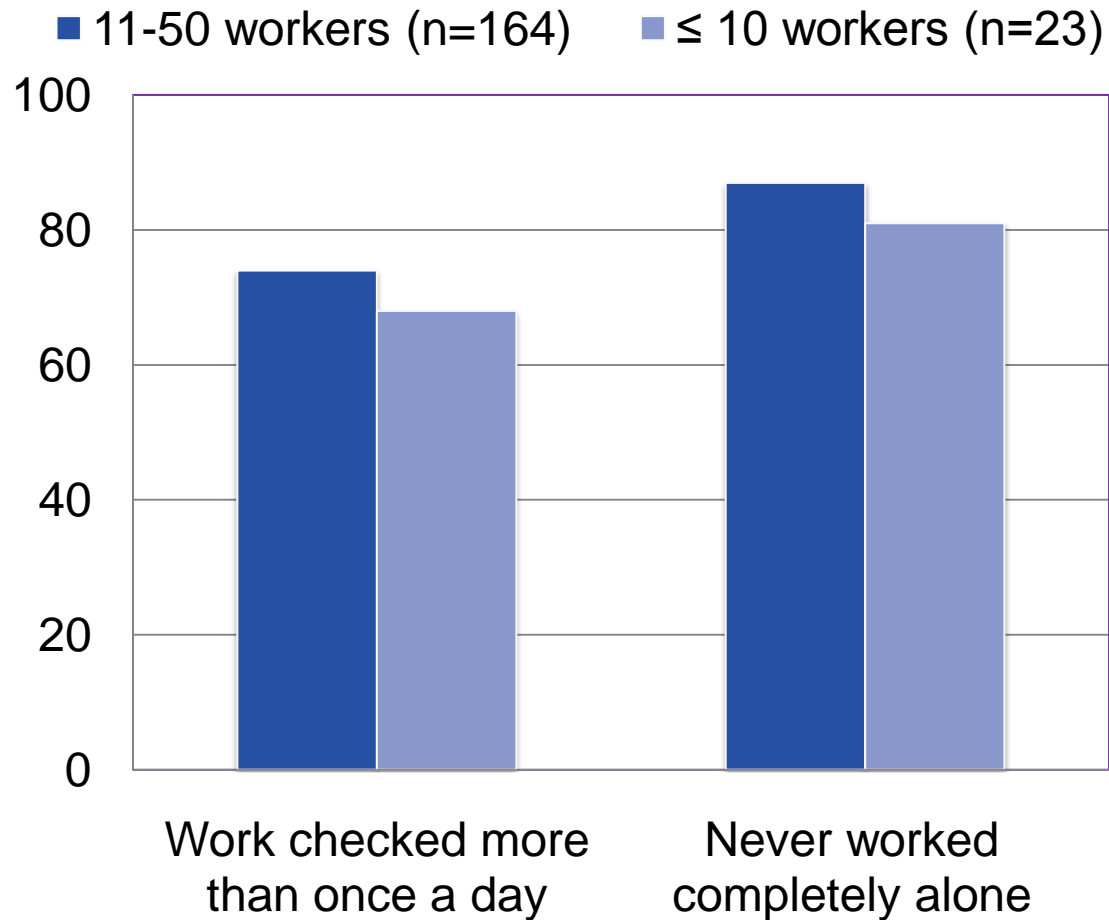
Hazardous Tasks Performed

■ ≤10 workers (n=23) ■ 11-50 workers (n=164)



Results - *Safety Practices*

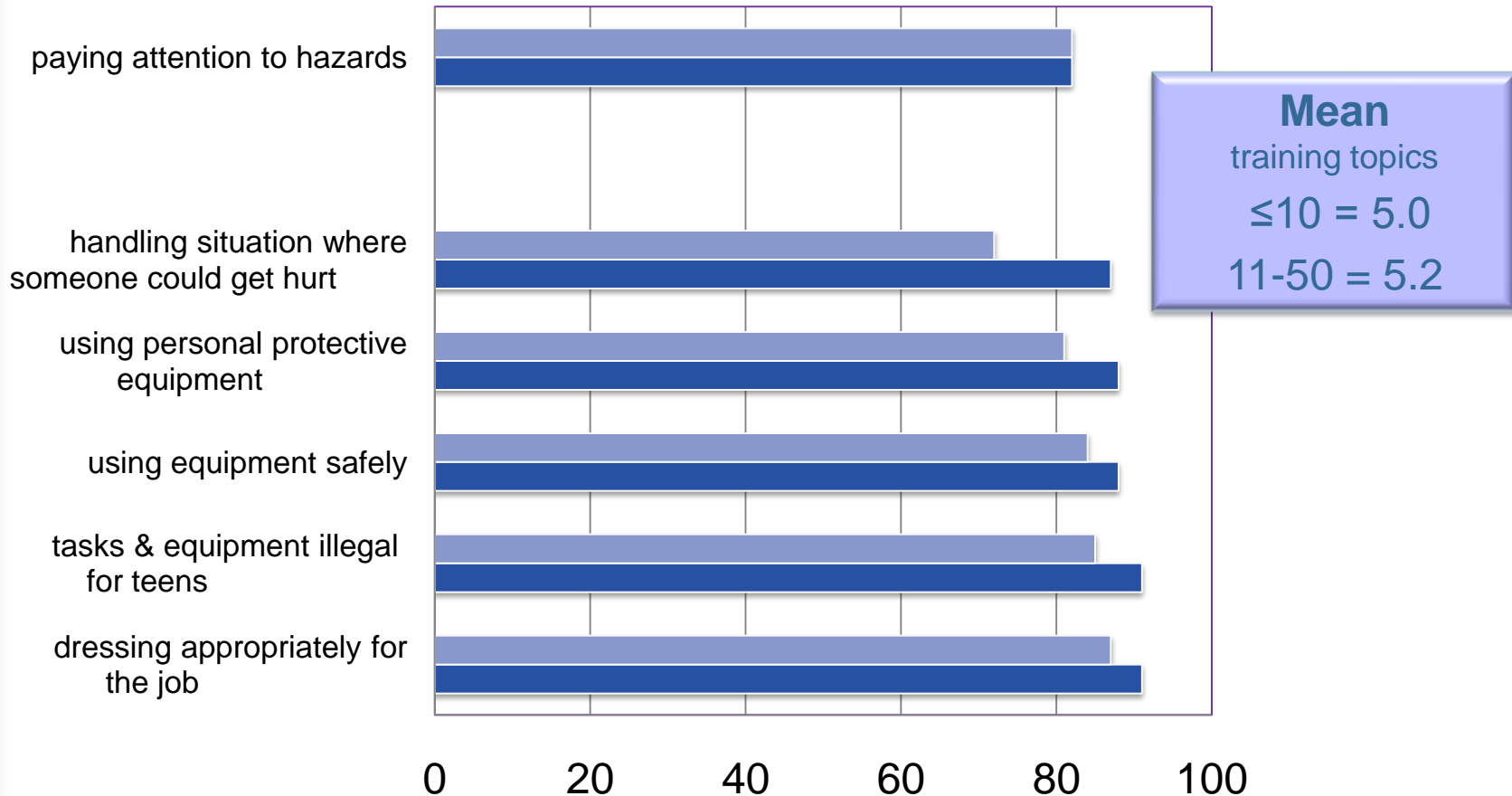
Supervision



Results - *Safety Practices*

Safety-related Training

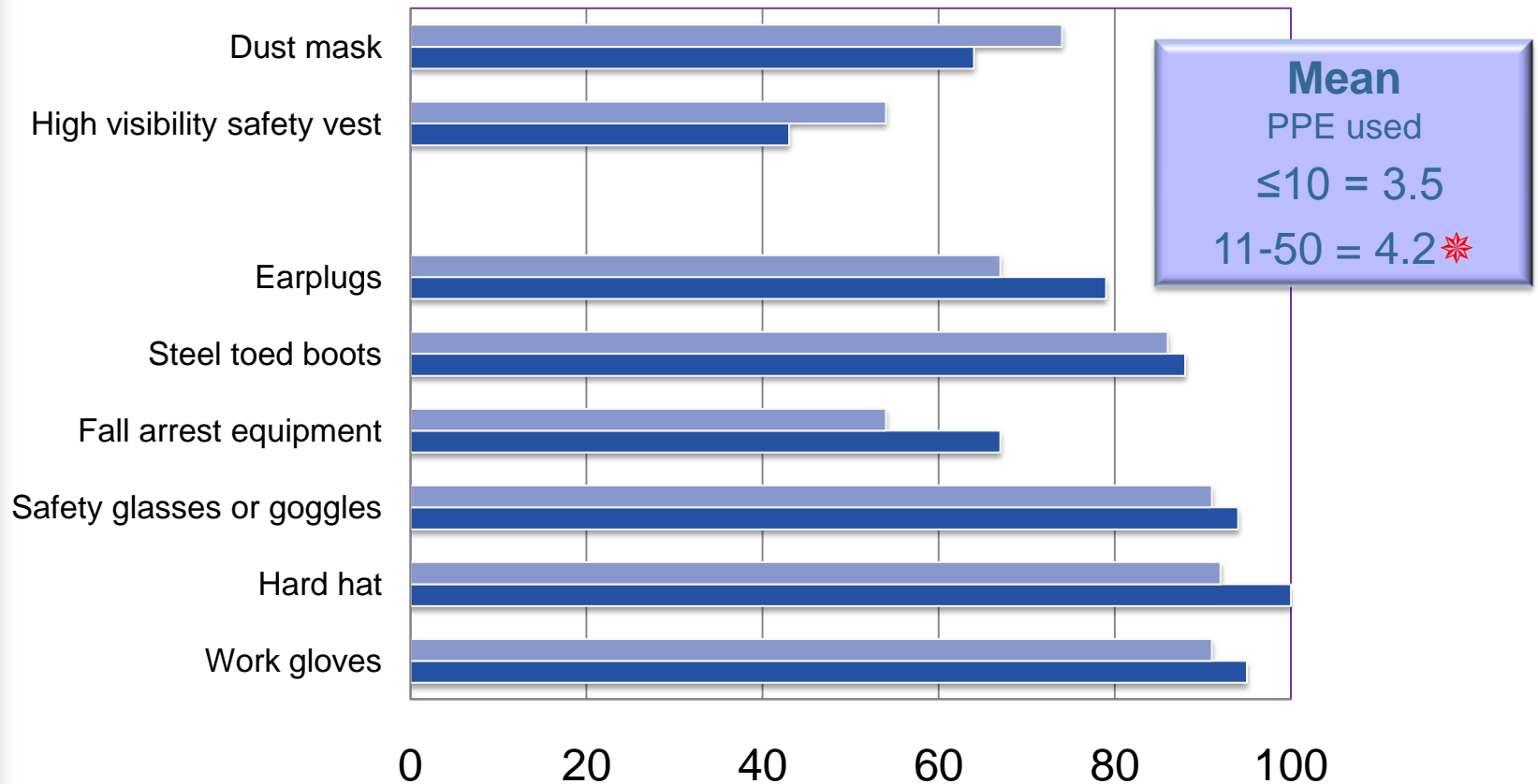
■ ≤ 10 workers (n=23) ■ 11-50 workers (n=164)



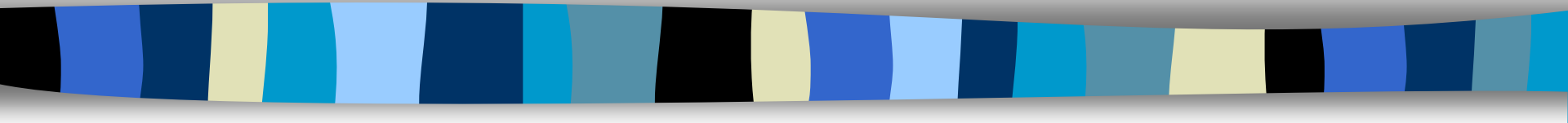
Results – Safety Practices

Personal Protective Equipment Use

■ ≤ 10 workers (n=23) ■ 11-50 workers (n=164)



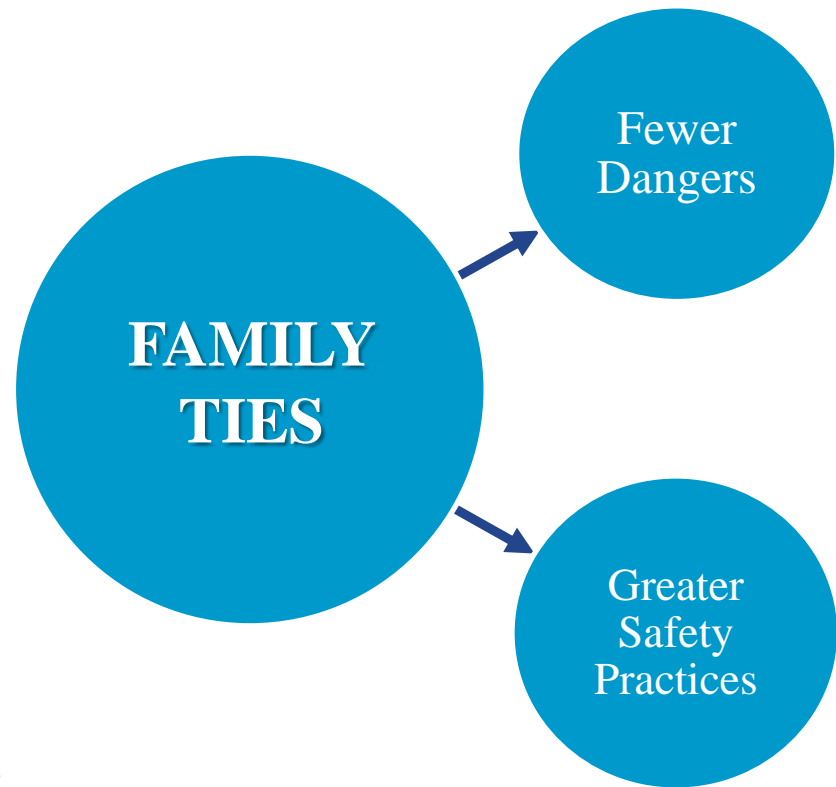
CONCLUSIONS



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!