



Developing Products to Prevent Work-Related Musculoskeletal Disorders in Aging Construction Workers in Small Construction Firms

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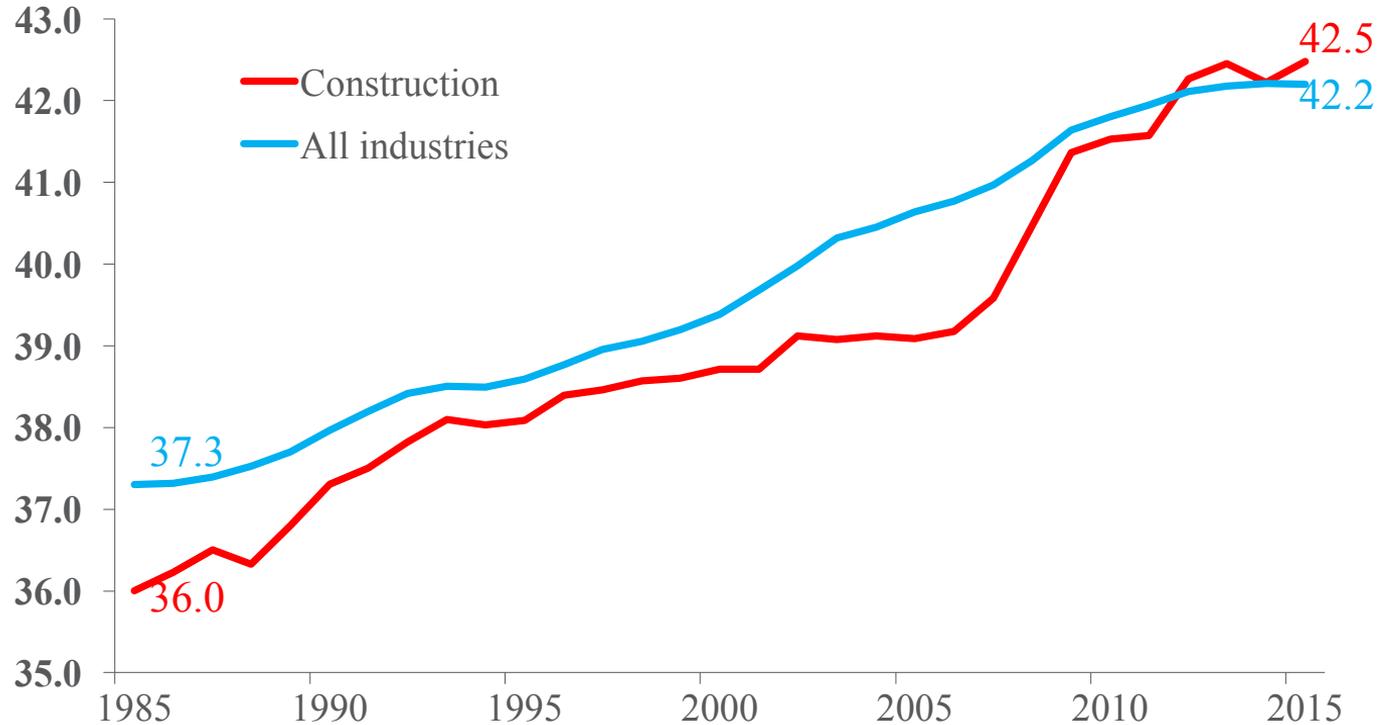
Overview

- Background
- Demographics and OSH outcomes for older workers in construction.
- Needs assessment methods and findings

Background

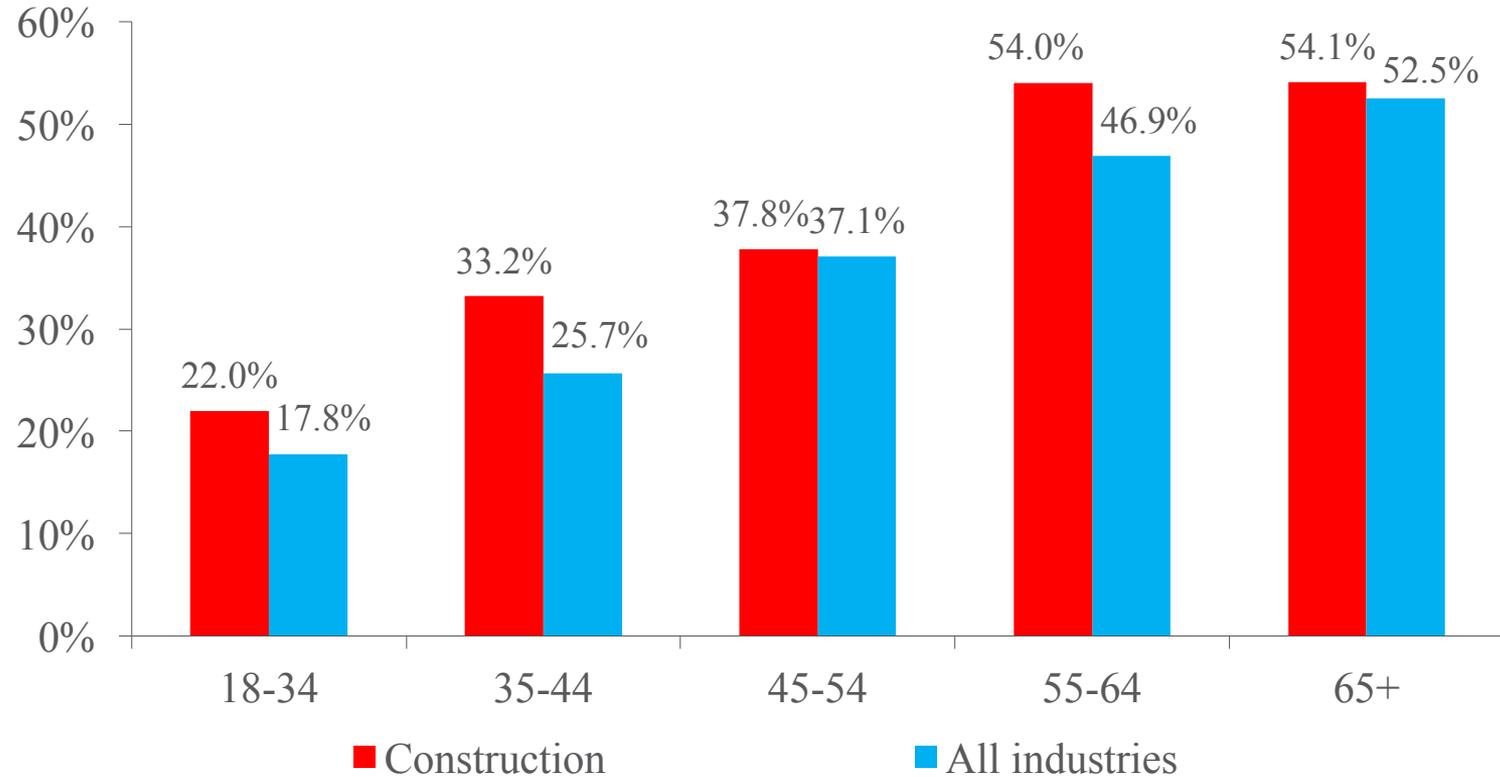
- In construction, workplace musculoskeletal disorders (WMSDs) are a significant portion of non-fatal injuries and a major cause of functional impairments.
- Each year, construction companies lose highly skilled and experienced employees.
- Small businesses are 80% of construction (CPWR, 2013).
- National Center for Productive Aging and Work (NCPAW)
 - Products to reduce WMSDs among construction workers across age groups
 - Meet needs of aging construction workers and be relevant/accessible to small enterprises
- Starts with a needs assessment to determine gaps in research activity and product development that benefit aging workforce

Between 1985 and 2015, the average age increased **6.5** years in construction, and **4.9** years for all U.S. workers



Source: 1985-2015 Current Population Survey. Calculations by The CPWR Data Center.

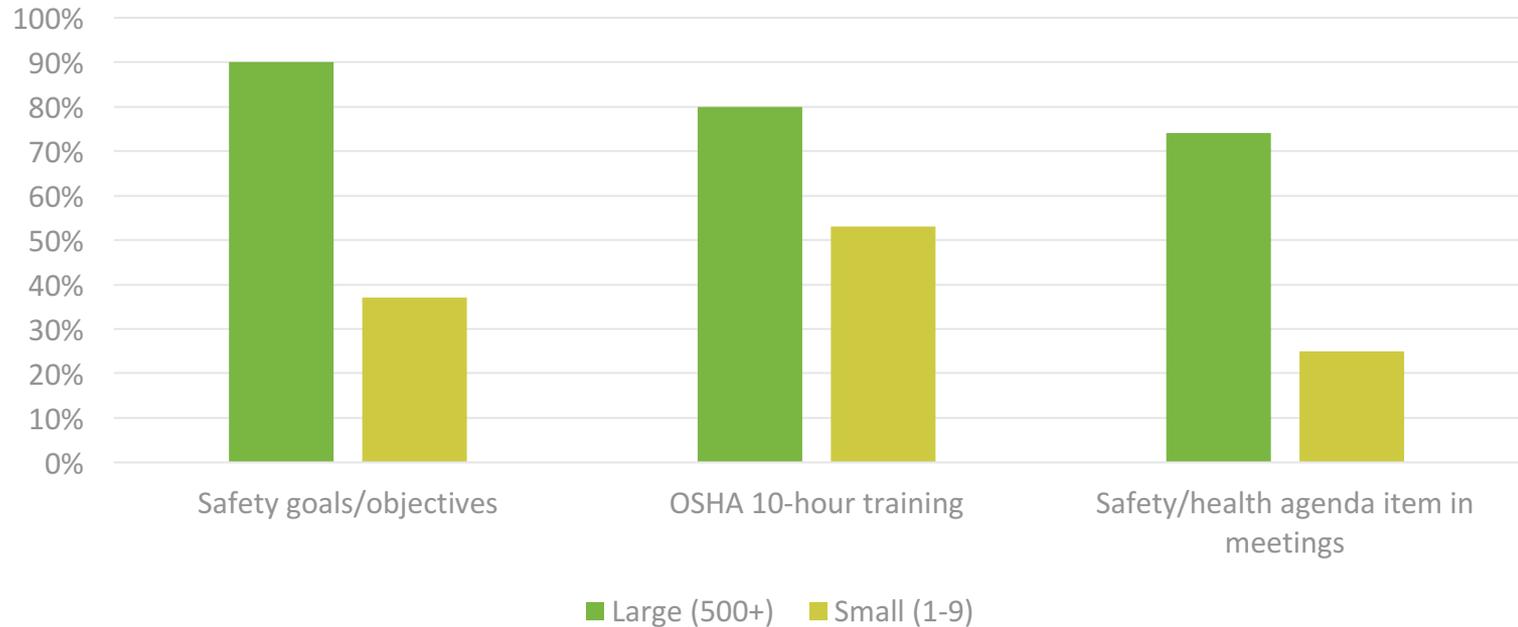
During the past 30 days, have you had any symptoms of **pain, aching, or stiffness** in or around a joint?



Source: 2015 National Health Interview Survey. Calculations by The CPWR Data Center.

Safety Culture Indicators

Comparison of Large and Small Construction Contractors



Theoretical Framework

- **Work Ability** ^{1,2}: a worker's capacity to continue working in his or her current job, given work demands and available resources.
- Four basic areas of focus:
 - The work environment (e.g., ergonomics, human factors engineering)
 - The organization of work (e.g., job design, return to work)
 - The employee (e.g., chronic disease management, programs that promote health & well-being)
 - Social support (e.g., community support, protection from discrimination at work)

¹ Ilmarinen J. (1999). Ageing workers in the European Union: Status and promotion of work ability, employability and employment. Finnish Institute of Occupational Health and Ministry of Social Affairs and Health, Helsinki, 274 pages.

² Silverstein, M. (2008). Meeting the challenges of an aging workforce. *American Journal of Industrial Medicine*, 51, 269-280.

Preliminary Analysis: Needs Assessment

- Needs assessment—Small business owners:
 - Health/safety needs, risks
 - Perceptions of older workers and generational differences
 - Desired products/guidance to benefit older workers
 - What they're currently doing
 - Barriers and challenges to information and practices
- Focus group with 9 small business owners, 2 from construction
- Thematic analysis utilizing the Work Ability model
- Inductive coding
- Intercoder assessment revealed substantial agreement in major themes identified and corresponding subthemes.

Work environment

- Ergonomic risk factors
- Slips/trips/falls
- Physical environment
- Eye/vision
- Hearing/noise

Work environment

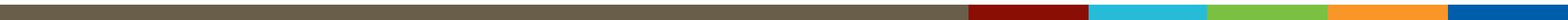
- **Slips/trips/falls:** *“Well in our space **it is slips and falls. Yeah going down physically, going down.** The other is moving any weight or equipment, materials that may be at a certain weight threshold where it, you know it leaves their hands or their control and then something happens when it hits the ground or comes up. That is what we see often.”*

Work environment

- **Physical environment:** *“From our perspective, **small business operating in the older building right. There’s a lot of risk with this.** There’s you know from **lead potential** from even the **build-up of dust** to you know, some animals and all that good stuff and this is in downtown Cincinnati.”*
- Adjust the work environment for age-related changes
- Work-rest schedules & reduction of repetitive tasks

Work organization and psychosocial factors

- Age stereotypes
- Adaptability
- Stress
- Work flexibility



Work organization and psychosocial factors

- **Age stereotypes:** *“Yeah, I would complement that as well. Some work that we do, do with municipalities etc. with **older or more-seasoned workers** is that when a **particular safety measure or policy** is put in place as simple as putting on a hardhat that the folks who have been in that space for 25/30/40 years **they don’t see any reason for that at all.**”*

Work organization and psychosocial factors

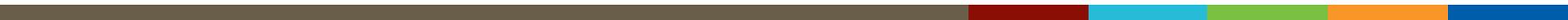
- **Adaptability:** *“Moderator: okay, anyone else? What about needs in those of you who work in the construction industry? That is a very physically demanding job. What happens as your workers age?”*
- *I would say they look for more of a, a more well **defined job description** with some parameters. You know, where there’s a lot of physical activity, you **better make sure that you’ve got the up-to-date and necessary equipment to assist them to help them do their job.***

Work organization and psychosocial factors

- **Stress:** *When I think about it, our greatest risk is **accumulated stress** because **we're not moving around** a lot and we're dealing with **tight schedules** and having to be creative instantly and pull a rabbit out of your hat all the time. **And I'm kind of curious about that end of it. What is the long-term impact of stress?** Although, I guess I could be an example of it.*
- *Work organization and psychological factors*
- *Age stereotypes influence attitudes toward older workers*
- *Older workers are perceived as being less adaptable*

Individual employee needs

- Chronic disease
- Training
- Disability
- Age-related declines



Individual employee needs

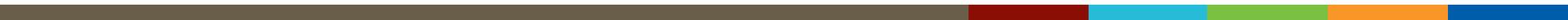
- **Chronic disease:** *“But, we have a number of folks who have **terminal illnesses** and you know they have to take medication and things of that nature and I guess, I don’t ask them if they are okay because I see them and I know they are medicating for their own safety. Right.”*

Individual employee needs

- Training: “...*We’ve done training* and that’s around awareness, but the individuals have to actually practice what they learn to change the behavior toward more safe and safety behavior. And that’s a challenge where we think, you know *you can teach old dog new tricks but some of the old dogs say, you know in the last 60/65/70 years, I’m good.*”
 - Chronic disease management
 - Healthcare and wellness programs
 - Design and framing of training
 - Age and specific approaches to training

Social support

- Information seeking
- Protection from discrimination
- Non-work factors



Social support

- **Information seeking:** Well in the specific tactical no. In a strategic sense meaning what I try and do is compare our claim's data on property and casualty and **our workers compensation to peers in the industry**. Are we higher, lower, average, and if I know I'm higher or I know I'm average I have some room for improvement. Things that are working if I'm below benchmark are probably pretty good, **but the data is not easy to obtain**. So if the answer is, **I have a problem based on that benchmarking I know I need to do some more digging on the level of what is it? Is it eye safety? Is it head safety? Is it how we dig trenches? What is it that's the problem**

Social support

- **Protection from discrimination:** ...we're in HR as part of our business and so we directly deal with **age discrimination**, whereby employers or co-workers may have more of a negative connotation based on a perceived age of someone. Their capacity, their ability or inability, **there is a lot of perceptions around this space and unfortunately we're called in to defend the aging employee** when there is, when they decide to omit their birthdate or graduation date from high school or college from the resume. When that comes up, it's so, did you just graduate or did you graduate in '74, right. We've got it, say well yeah graduated in '72. **You know, you're not snappy enough to do this work, right.** And we've gotten that.
- Incentivized training for management.
- Health and safety information that's aligned with reduction of workers' comp costs

Conclusion

- Job design and redesign that benefits all workers.
- Counter misunderstandings among organizations and managers regarding the abilities and skills of older workers (e.g., adapting to new technologies).
- Leverage social support mechanisms used by small businesses to disseminate OSH tools and guidance.

Next Steps

- Project: Suite of products to reduce WMSDs among construction workers across age groups
- Insights will include but not be limited to those from small business employees and owners
- Phase 1: Experiences with and knowledge of WMSDs in construction
- Phase 2: Needs and preferences regarding dissemination of materials on construction WMSDs
- Phase 3: Product development informed by Phase 1 & 2
- Phase 4: User testing by employers and employees

Acknowledgements

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Questions

