

Aging Workforce and Ergonomics in Construction: Opportunities and Challenges

Sang D Choi*

Department of Occupational and Environmental Safety and Health, Center for Occupational Safety and Ergonomics Research, University of Wisconsin, USA

Construction remains one of the largest industries in the U.S and accounts for a disproportionately large percentage of all occupationally related injuries, illnesses, and disabilities. To further complicate the situation, the construction workforce is aging as millions of baby boomers (born between 1946 and 1964) move toward retirement age [1], considering that more than 40% of construction workers are baby boomers [2]. Due to the rapidly increasing numbers of older workers in the workforce there is an urgent need to give particular consideration to understanding and addressing the needs of older workers in the construction sector. How can we sustain a healthy construction workforce among aging workers? Is the current knowledge about keeping older workers safe and healthy at construction work sufficient?

Who is considered to be an older worker? There is no standard definition of 'older' or aging worker. The U.S Department of Labor uses >40 years in some statistics, while some Bureau of Labor Statistics stratifications use >45 years for injury and illness reporting. The aging process is affected by multiple factors, including genetic makeup, environmental and socio-economic conditions. It can be of attention to anyone who is individually experiencing signs of aging, which includes about everybody over the age of 40 [3]. The decremental theory of aging proposes that, as persons advance in age, some work capacities, both physical (cardiovascular function, muscle strength, endurance) and cognitive (sensorimotor performance, decision time, memory), decline lessening the person's ability to cope with multiple job demands.

There has been a rising interest in ergonomic solutions to protect workers against work-related musculoskeletal disorders (MSDs) and injuries. Construction work is frequently associated with musculoskeletal risk factors such as forceful exertions that are excessive or prolonged; awkward postures that are maintained for extended periods; pressure from hard surfaces or sharp edges on body tissues; vibration from tools and machinery; and environmental factors such as extreme temperatures and humidity. It should be noted that each construction occupation utilizes different trade-related skills and completes different tasks within the organization. For some

construction jobs, the worker needs to work close to the ground or floor, while others require working in overhead work. The nature of work and the characteristics of the specific jobsite or trade could expose employees in various different work-related musculoskeletal hazards [4]. Ergonomic interventions involve matching the task, the tools, and the environment, to the needs of the worker with the goal of achieving a healthy and productive workplace. Since older workers may struggle with work demands, using ergonomics to improve work design, improving the work environment, and tool design becomes extremely important.

By understanding the age profile of the workforce, considerations can be given to task assignment, work hours, workspace design and performance expectations relative to the age of the construction workers. Also, the stakeholders in the construction industry need to make the necessary changes to accommodate an aging workforce if they wish to remain competitive. It is important to note that any new approaches should be considered early in the planning stages of the construction process. Ergonomic considerations need to be addressed and be designed into the construction project from the beginning (e.g., MSD prevention through design). All in all, ergonomics can play an important role in better understanding of the risk factors that relate to the health and safety needs of older workers.

References

1. National Institute for Occupational Safety and Health (2004) Worker Health Chartbook, 2004, U.S. Department of Health and Human Services, DHHS (NIOSH) Publication No. 2004-146.
2. Bureau of Labor Statistics (2006) Occupational Projections and Training Data, Washington, D.C., U.S. Department of Labor.
3. Spirduso WW (1995) Physical dimensions of aging, Champaign, IL: Human Kinetics.
4. National Institute for Occupational Safety and Health (2007) Simple Solutions: Ergonomics for Construction Workers, U.S. Department of Health and Human Services

*Corresponding author: Sang D Choi, Department of Occupational and Environmental Safety and Health, Center for Occupational Safety and Ergonomics Research, Hyland Hall 3509, University of Wisconsin, Whitewater, Wisconsin 53190-1790, USA, Tel: +1 (262) 472-1641; Fax: +1 (262) 472-1091; E-mail: chois@uw.edu

Received December 11, 2012; Accepted December 13, 2012; Published December 14, 2012

Citation: Choi SD (2013) Aging Workforce and Ergonomics in Construction: Opportunities and Challenges. J Ergonomics 3:e116. doi:10.4172/2165-7556.1000e116

Copyright: © 2013 Choi SD. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.