

Introduction

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Today's on-demand, increasingly competitive global economy is redefining what it means to be someone who works. Although some may find opportunities, these complex economic times have threatened and continue to threaten the employment and welfare of many workers, their families, and their communities. Long working hours, nonstandard work arrangements, and reporting to multiple employers while juggling the competing demands between work and life have become the norm for many in today's workforce. Either by choice or necessity, many of today's workers are working beyond the "traditional" retirement age and pursuing multiple careers throughout their lives. Beyond the potential, overt safety and health risks faced at the workplace, it has become increasingly clear that these conditions have the potential to also impact overall health and well-being outside of work—influencing, for example, individual health behaviors, caring for family members, relationships, and family nutrition—with consequent effects on the development of acute and chronic health conditions in workers and their families.

Employers in the 21st century are challenged by fierce, global economic pressures while managing their work environments and workforce. Employers are required to provide safe and healthful working conditions that protect workers from recognized workplace safety and health risks, such as traumatic

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Total Worker Health, H. L. Hudson, J. A. S. Nigam, S. L. Sauter, L. C. Chosewood, A. L. Schill, and J. Howard (Editors)

injury and chemical exposures. At the same time, employers are confronted with complex, emerging workforce issues, such as the shift in employment relationships, recruitment and retainment of workers in highly competitive labor markets, an aging workforce, and the uncertainty of how best to manage a workforce with multiple chronic health conditions while containing ever-growing health-care costs. Successfully balancing these issues has implications for both the safety and health of workers and organizational sustainability.

Occupational safety and health (OSH) leaders and practitioners recognize that the safety, health, and well-being of workers are influenced by workplace risks (e.g., unsafe working conditions, hours of work, wages, workload and stress, lack of access to paid leave), by societal risks beyond the workplace (e.g., lack of access to health care, social and environmental exposures), and by individual factors (e.g., gender and genetic predispositions). Furthermore, a growing body of evidence points to the relationship between chronic health conditions afflicting society today (e.g., cardiovascular disease and obesity) and conditions in the workplace. In addition, there is growing concern over the health protection of workers due to the recent shifts in employment practices, such as the movement toward nonstandard work arrangements (Howard, 2017) and fissuring of the workplace (Weil, 2014). Such practices are intensifying the entanglement of personal and work-related exposures and risks because many of these jobs are performed outside traditional work settings.

When seen in aggregate, shifts in the demands of the changing economy, new work arrangements and employment practices, and longer and more diverse work for many all argue for a more comprehensive look at safety and health of workers. The traditional siloed, or reductionist, approach is likely to be inadequate to safeguard the safety, health, and well-being of workers. These complex realities are driving multiple efforts to broaden the approach to worker safety and health, thereby reducing the impact and cost of injuries and illness and providing a pathway to create work and work environments that are safe and health enhancing.

Leaders in OSH are calling for comprehensive and systems-level prevention strategies to better address risks to the safety, health, and well-being of workers and the success of organizations in today's global economy. In fact, in 2003, the National Institute for Occupational Safety and Health (NIOSH) started the *Steps to a Healthier US Workforce* initiative to explore the benefits of integrating the protection of workers from work-related safety and health hazards with efforts to promote health and prevent disease. In 2015, NIOSH trademarked the expression *Total Worker Health*® in reference to policies, programs, and practices that take into account the work environment—both physical and organizational—while addressing safety and health risks arising from beyond the workplace, as described by Schill, Chosewood, and Howard in Chapter 2, this volume. In 2010, the World Health Organization published *Healthy Workplaces: A Model for Action*, which applies a comprehensive approach to worker health. This international framework embraces a new way of thinking about worker health using a public health approach addressing work-related physical and psychosocial risks, pro-

motion and support of healthy behaviors, and broader social and environmental determinants of health. The model also incorporates criteria for a continual improvement process to protect and promote the health, safety, and well-being of all workers and the sustainability of the workplace. The Deutsche Gesetzliche Unfallversicherung (DGUV), Germany's primary agency for social accident insurance institutions, recognized important trends in the future of work. In 2016, DGUV published a position paper that describes 21st-century changes to work and its impact on worker safety and health and discusses the consequences and potential solutions for employers. The paper serves as a framework to inspire broader and more comprehensive prevention research and practice for worker safety and health, and it provides recommendations to companies on issues related to "new forms of work" and new social and labor market policies.

This volume brings together state-of-the-art research and practice in comprehensive and integrated prevention strategies from the most accomplished scholars and practitioners in the field. Owing to the still emergent status of the *Total Worker Health* (TWH) field, a unified model or framework for the TWH approach does not yet exist. Thus, throughout the volume are varying descriptions of TWH concepts. The variation between the present authors in how they approach or portray integration is only natural and to be expected—notwithstanding that all chapters in the volume clearly converge in the general understanding of TWH policies and integration as the blending of workplace safety and health programs, including health promotion. This perspective is preserved for the readers so they can fully appreciate the evolution and development of this field. As discussed in the opening two chapters, the integrated approach to safety and health is rapidly evolving and is being applied in science and practice at academic centers of excellence, in labor organizations, and in industry.

This book is designed for multiple professional audiences with interests in the safety, health, and well-being of workers. It aims to inform these professionals of integrative approaches to safety, health, and well-being to further prevent adverse worker health and safety outcomes from contemporary work and work environments. A primary audience includes professionals from the field of OSH (e.g., occupational medicine physicians, occupational health nurses, industrial hygienists) and those who share a common goal of identifying hazardous conditions, materials, and practices in the workplace and assisting employers and workers in eliminating or reducing the associated risks. Another audience includes professionals who self-identify as TWH practitioners and scientists. This speaks to those professionals who, soon after learning about the TWH concept, quickly realized the value of an integrated approach and began to adopt and promote the philosophy within their day-to-day responsibilities and business operations. An additional audience includes those who have responsibility for the overall health of the workforce and public and comprises professionals in the fields of public health, health promotion, health education, risk management, human resource management, employee assistance, occupational health psychology, and organizational sciences. Although

these professionals expand beyond the traditional OSH field, their perspective is critical for a broader application of policies, practices, and programs that can comprehensively address determinants that further protect worker health and well-being.

This book can serve as a handbook for practitioners in these fields, whether from management or labor, on state-of-the-art practices for interventions that integrate elements of OSH protection with organizational policies, programs, and practices to advance worker health and well-being. Researchers will be informed by the chapters in this volume that provide updates on the current scientific evidence base and the knowledge gaps pertaining to the design and effectiveness of integrated interventions. This volume can also serve as a textbook for newly developed professional training programs and coursework on integrated approaches to worker safety, health, and well-being that are being created in academic centers in the United States and abroad.

This book is organized into three parts and 17 chapters. Part I, Historical, Theoretical, and Empirical Foundation of *Total Worker Health*®, traces the historical developments for this emerging field and provides a comprehensive overview of the theoretical rationale and seminal research that supports the argument for integrative workplace prevention strategies. The historical movement of integrated programming in OSH is introduced by DeJoy and Wilson with a discussion on modern challenges and opportunities for advancing TWH research and practice. Within the opening chapter, the authors discuss broad considerations for adoption and implementation of the TWH approach in research and practice. In Chapter 2, Schill, Chosewood, and Howard introduce readers to a fundamental understanding of the TWH concept and proceed with an insider's view of the development and implementation of the NIOSH TWH program. They describe a national call for research, practice, policy, and capacity building and discuss the future vision for the field of TWH. In Chapter 3, Schulte and Pandalai lay the scientific groundwork for a TWH approach by describing evidence of the interaction of occupational risk factors with personal risk factors in the etiology of occupational illness and injury. They also briefly discuss ethical implications pertaining to interventions that arise from the interplay of personal and occupational risk factors. In Chapter 4, commenting on the empirical foundations for TWH, Anger and colleagues review studies on the effectiveness of TWH interventions and discuss the limitations of this research. They proceed with a dialogue of opportunities to further develop the science. Part I concludes with a description and application of two complementary theoretical frameworks for TWH research and application from two academic centers. Sorensen and colleagues present a conceptual model to inform the design, implementation, and evaluation of integrated approaches and review applications of this model. Within their discussion, they mention factors critical to successful implementation of policies, programs, and practices. In Chapter 6, Cherniack and Punnett provide a framework for participatory action research and practice as applied to a TWH approach. They share compelling preliminary findings from four case studies and discuss practical implications of imple-

menting and evaluating integrated interventions within the high-risk work environments, such as health care and corrections.

Part II, Organizational Approaches to *Total Worker Health*® Interventions, comprises four empirical chapters that describe applications for integrated interventions and evidence of their effectiveness in different occupational contexts. This section includes models for large, medium, and small organizations; a labor management approach; and an integrated community–workplace intervention model. Opening the second part, Campo, Kelly, and Rohlman provide an overview of findings on the prevalence of OSH and well-being programs of varying complexity in the Midwest. Drawing from the health care sector, McLellan shares a detailed case description of how to create a sustainable TWH approach in a mature and large health-care organization with a culture that traditionally treated occupational health and safety and personal health as separate concerns. Chapter 8 also reflects on the various roles of a TWH practitioner in implementing an integrated safety, health, and well-being program, such as navigating internal politics and obstacles, building teams, and evaluating program effectiveness. In Chapter 9, Newman and Tenney summarize research on the application of integrated safety, health, and well-being interventions in small and medium-sized businesses and suggest a systematic approach to developing sustainable, scalable solutions in these organizations. The authors briefly describe a TWH practitioner’s responsibilities and discuss obstacles and facilitators within the context of applying TWH interventions in small and medium-sized organizations. In the following chapter, Becker and Schneider provide a labor-management perspective and discuss challenges and opportunities for implementing a TWH approach in the multiemployer industry of construction. Concluding Part II, Baron, Tsui, Cuervo, and Islam discuss how recent changes in the workforce influence the need to expand the reach of TWH programs beyond the worksite and into the community. Then Baron and colleagues describe a framework that aims to bring together the fields of OSH and community health that supports a TWH approach.

In Part III, A Spectrum of *Total Worker Health*® Approaches, six chapters describe integrated interventions that target specific health and safety risks of central concern in occupational and public health today—mental health, aging, fatigue and sleep, and work–life conflict. Commencing this part, LaMontagne and colleagues outline the evidence on workplace mental health interventions and propose a new comprehensive intervention approach to optimize both the prevention and management of mental health problems in the workplace. Within this chapter, the authors discuss initial results on the effectiveness of an integrated workplace mental health intervention as well as cautionary risks and challenges of such approach. In Chapter 13, Grosch, Hecker, Scott, and Scholl examine the changing age structure of the workforce and provide a new framework, called productive aging, for addressing occupational health and safety concerns in an aging workforce. Next, Caruso reviews the science linking both workplace exposures and risk factors beyond the workplace with sleep disorders and fatigue. She provides an overview of strategies for managers and

workers to reduce risks from inadequate sleep and discusses various resources for organizations and workers to use to promote healthy sleep. In Chapter 15, Hammer and Perry share a comprehensive review of research and practice on interventions aimed at reducing stress arising from work and life demands, including successes and challenges of implementing work–life interventions. Then they discuss recommendations for interventions that apply TWH practices and strategies. Rounding off the section by drawing upon experiences across industry, Goetzel and colleagues explore the evolution from traditional workplace health promotion programs to broader culture-of-health models within organizations and emphasize the full value of interventions—moving beyond the limited focus on return on investment. Also described in Chapter 16 is how employers have begun to implement, measure, and evaluate the value on investment of culture of safety and health programs, and a business case is presented for expanding such programs into the community. In the concluding chapter of the volume, Hudson and Nigam highlight three cross-cutting themes that are driving a paradigm shift in the area of OSH. Then the authors discuss opportunities for the TWH approach to move the OSH field forward through investments in training, science, and practice, and they close by proposing a new direction for achieving well-being through work.

This collection of thoughtful chapters offers insights on how the science and practice of the TWH field is forming, as well as new directions for implementation, political and ethical considerations, and evaluation of impact. We hope this volume provides an important reference for improved practice, inspiration for discovery of new knowledge, and opportunities for collaboration among all those dedicated to protecting worker safety and health and advancing worker well-being.

REFERENCES

- Deutsche Gesetzliche Unfallversicherung. (2016). *New forms of work new forms of prevention. Work 4.0: Opportunities and challenges*. Berlin, Germany: Author. Retrieved from http://publikationen.dguv.de/dguv/pdf/10002/dguv-nfda_en_accessible.pdf
- Howard, J. (2017). Nonstandard work arrangements and worker health and safety. *American Journal of Industrial Medicine*, 60, 1–10. <http://dx.doi.org/10.1002/ajim.22669>
- Weil, D. (2014). *A fissured workplace: Why work became so bad for so many and what can be done to improve it*. Cambridge, MA: Harvard University Press.
- World Health Organization. (2010). *Healthy workplaces: A model for action. For employers, workers, policy-makers and practitioners*. Geneva, Switzerland: Author. Retrieved from http://www.who.int/occupational_health/publications/healthy_workplaces_model_action.pdf