

Occupational Health Psychology

Irvin Sam Schonfeld

- LAST MODIFIED: 26 APRIL 2018
- DOI: 10.1093/OBO/9780199828340-0211

Introduction

Occupational health psychology (OHP) is a cross-disciplinary subspecialty within psychology. OHP derives from two disciplines within applied psychology, health psychology and industrial/organizational psychology. OHP is also linked to disciplines outside of psychology, such as occupational medicine and public health. The discipline has roots in 18th-, 19th-, and 20th-century thinkers, including Adam Smith, Friedrich Engels, Karl Marx, Émile Durkheim, and Max Weber. These thinkers were concerned with the impact of the organization of work and the business cycle on human life. Later research by Elton Mayo, Marie Jahoda, Walter B. Cannon, Hans Selye, and investigators at the University of Michigan's Institute for Social Research, the Tavistock Institute in London, the Stress Research Laboratory (now the Stress Research Institute) in Stockholm, and the National Institute for Occupational Safety and Health laid a foundation for OHP before the term was coined. While health psychology has largely been concerned with influences outside the domain of work that affect health and health behaviors, OHP emerged as a discipline that is concerned with understanding the nature of the impact of psychosocial working conditions on the physical and mental health and well-being of workers and their families. Examples of psychosocial working conditions include: (a) how much decision latitude a worker has, (b) psychological workload, and (c) the extent to which there is an imbalance between a worker's effort, on one hand, and the tangible *and* intangible rewards the worker gets from the job, on the other. Knowledge obtained from such research is used to develop interventions designed to protect and enhance the health of workers, while maintaining organizational productivity. OHP is also concerned with occupational safety and accident prevention, the impact of unemployment and job insecurity on mental and physical health, the prevention of violence and psychological aggression at the workplace, and identifying factors that enhance work-family balance. The author thanks Anita Sicignano and Silke Toplak for reading and commenting on an earlier version of this bibliography.

Textbooks

Given the newness of the field, there are not many textbooks devoted to OHP. At least two are currently available: [Leka and Houdmont 2010](#) and [Schonfeld and Chang 2017](#). Both books can be used in upper-level undergraduate classes and in graduate courses. [Schonfeld and Chang 2017](#) comes with a separate set of essay questions that instructors can use in student tests and assignments.

- **Leka, S., and J. Houdmont, eds. 2010. *Occupational health psychology*. Chichester, UK: Wiley-Blackwell.**
Save Citation »Export Citation »E-mail Citation »
The chapters are written by different scholars with expertise specific to each chapter's subject area. The chapters address theories of workplace stress, risk management, corporate culture, workplace health promotion, the relation of the work organization to health, and positive psychology at work. A chapter is devoted to the future of OHP. The book also looks at burnout and its relation to work-related engagement.
Find this resource:
- **Schonfeld, I. S., and C.-H. Chang. 2017. *Occupational health psychology: Work, stress, and health*. New York: Springer.**
Save Citation »Export Citation »E-mail Citation »
The book examines theories of workplace stress; the impact of psychosocial working conditions on depression, alcohol use, anxiety, burnout, cardiovascular disease (CVD), stroke, and musculoskeletal problems; the impact of unemployment and job insecurity on depression, suicide, and CVD; work-related coping; workplace violence and psychological aggression; health-related organizational climate and leadership; safety and accidents; work-life balance; and workplace interventions. Specific occupations (e.g., nurses, teachers, soldiers, police officers) are also examined. The final chapter is devoted to the future of OHP.
Find this resource:

Handbooks

There are a number of handbooks that are relevant to OHP. Three of the most comprehensive are [Clarke, et al. 2016](#); [Gatchel and Schultz 2012](#); and [Quick and Tetrick 2011](#). [Cooper, et al. 2009](#) concerns the interface of work and health psychology. [Kelloway, et al. 2006](#) is more narrowly focused on one particular province of OHP, workplace violence and other types of work-related aggression. Finally, the focal interest of [Sinclair, et al. 2013](#) is research methods in OHP.

- **Clarke, S., T. M. Probst, F. Guldenmund, and J. Passmore, eds. 2016. *The Wiley Blackwell handbook of the psychology of occupational safety and workplace health*. Chichester, UK: Wiley-Blackwell.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The book covers a number of OHP-related topics, with a special emphasis on safety. Other topics covered include the job demands-resources model, workplace aggression, and workplace health promotion. A series of chapters is devoted to safety and accidents. Other chapters cover the role of leadership, peer norms, and personality and individual differences in the realm of safety.

Find this resource:

- **Cooper, C. L., J. C. Quick, and M. J. Schabracq, eds. 2009. *International handbook of work and health psychology*. 3d ed. Chichester, UK: Wiley-Blackwell. .**

[DOI: 10.1002/9780470682357](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The book provides coverage of such topics as job-related burnout, the role of individual differences in the area of workplace stress, the impact of organizational stress, alcohol and drug misuse in the organizational context, employee assistance programs, and presenteeism.

Find this resource:

- **Gatchel, R. J., and I. Z. Schultz, eds. 2012. *Handbook of occupational health and wellness*. New York: Springer Science + Business Media. .**

[DOI: 10.1007/978-1-4614-4839-6](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This book explores theories of job stress, work-related musculoskeletal disorders, work and cardiovascular disease (CVD), cancer survivors at work, and work-life balance. There are also chapters on safety, work schedules, and job-related burnout.

Find this resource:

- **Kelloway, E. K., J. Barling, and J. J. Hurrell Jr., eds. 2006. *Workplace violence*. Thousand Oaks, CA: SAGE.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The book examines physical violence, bullying, cyberbullying, counterproductive workplace behavior, sexual harassment, aggression in specific occupations (e.g., nursing, teaching), violence prevention, and training programs designed to reduce workplace aggression.

Find this resource:

- **Quick, James Campbell, and Lois Tetrick, eds. 2011. *Handbook of occupational health psychology*. 2d ed. Washington, DC: American Psychological Association.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This book provides a broad examination of a variety of topics including theories of occupational stress, cross-cultural issues in OHP, safety climate, the relationship of work to cardiovascular disease, and workplace interventions. There are also chapters devoted to eustress and work-family balance.

Find this resource:

- **Sinclair, R. R., M. Wang, and L. E. Tetrick, eds. 2013. *Research methods in occupational health psychology: Measurement, design, and data analysis*. New York: Routledge.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

Research methodology is an important driver of scientific advance. The book addresses the measurement of immune function, musculoskeletal functioning, work-related PTSD, sleep, work-family research, and mistreatment at the workplace. Other topics covered include sampling, self-report measures, experimental and quasi-experimental design, longitudinal methods, qualitative methods, and multi-level modeling.

Find this resource:

OHP-Related Organizations and Internet Resources

A number of organizations are concerned with research, practice, and teaching in connection to OHP. Three international societies are the main organizations representing OHP: the [European Academy of Occupational Health Psychology \(EAOHP\)](#), the [Society for Occupational Health Psychology \(SOHP\)](#), and the [International Commission on Occupational Health's committee on Work Organisation and Psychosocial Factors \(ICOH-WOPS\)](#). Other organizations are important to OHP, in that they are drivers of research and practice. One such organization is the [National Institute for Occupational Safety and Health \(NIOSH\)](#), a unit of the Centers for Disease Control and Prevention (CDC). Two networks, the [Work, Family, and Health Network \(WFHN\)](#) and the [Work and Family Researchers Network \(WFRN\)](#), are concerned with work-family research.

- **[EAOHP Bulletin: *The Occupational Health Psychologist*.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The EAOHP bulletin, called *The Occupational Health Psychologist*, keeps members up-to-date on organizational news and OHP-related events. The bulletins contain articles on research and practice as well as book reviews.

Find this resource:

- **[EAOHP Listserv.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The EAOHP listserv fosters communication among researchers, practitioners, and teachers.

Find this resource:

- **[European Academy of Occupational Health Psychology.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The EAOHP's website provides information on EAOHP's conference series and other events. The website also provides information on EAOHP books and conference proceedings.

Find this resource:

- **[International Commission on Occupational Health's committee on Work Organisation and Psychosocial Factors.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

Although not as informative as the EAOHP and SOHP websites, the ICOH-WOPS website provides information on the organization's international conferences and collaborations.

Find this resource:

- **[National Institute for Occupational Safety and Health.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The website provides information on NIOSH's contribution to OHP and graduate training in OHP.

Find this resource:

- **[Society for Occupational Health Psychology.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The SOHP's website provides conference information, information on OHP-related resources and graduate training, organizational events, and OHP-related publications.

Find this resource:

- **[SOHP Listserv.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

Like the EAOHP listserv, the SOHP listserv fosters communication among researchers, practitioners, and teachers.

Find this resource:

- **[SOHP Newsletter.](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The SOHP newsletter publishes organizational news, conference announcements, information about graduate training, articles on the history of OHP, and coverage of developments in research and practice.

Find this resource:

- **[Work and Family Researchers Network\(WFRN\).](#)**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The purpose of this network is to advance understanding of work and families. The website provides information about work-family research although, unlike WFHN, the network members do not form a unified team.

Find this resource:

- **Work, Family, and Health Network (WFHN).**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This website describes the efforts of a large interdisciplinary team of researchers to make progress developing psychosocial interventions aimed at improving the health and well-being of workers and their families. The website lists research reports and links readers to toolkits to effect change at the workplace.

Find this resource:

OHP-Related Journals

A number of peer-reviewed journals publish OHP-related empirical research, meta-analyses, and theoretical papers. The two leading OHP journals are *Work & Stress* and the *Journal of Occupational Health Psychology*. *Occupational Health Science*, which is affiliated with the Society for Occupational Health Psychology (SOHP), is the newest OHP-related journal. In addition, a number of other journals, while not centered on OHP, also publish OHP-related research, as evidenced by *Karanika-Murray, et al. 2009*. Such journals include the *Journal of Applied Psychology* and the *Scandinavian Journal of Work, Environment & Health*.

- ***Journal of Applied Psychology*.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The journal publishes research and theoretical papers bearing on affective, cognitive, and behavioral phenomena related to work and organizational settings. OHP constitutes part of the journal's coverage.

Find this resource:

- ***Journal of Occupational Health Psychology*.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

First published by the American Psychological Association in 1996, *JOHP* is the second oldest journal exclusively devoted to OHP. The journal covers research, theory, and public policy relevant to workplace psychosocial factors and health, safety, and well-being.

Find this resource:

- **Karanika-Murray, M., I. S. Schonfeld, and L. Schmitt. 2009. Survey of publication outlets in OHP. *Society for Occupational Health Psychology Newsletter* 7:13–16.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This article presents the results of a survey of OHP researchers who were asked to identify journals relevant to the field. The article provides information on journals deemed most pertinent to OHP.

Find this resource:

- ***Occupational Health Science*.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The newest OHP-related journal, *OHS* is published by SOHP and was launched in 2017. *OHS* is devoted to empirical and theoretical papers pertaining to work-related health and safety.

Find this resource:

- ***Scandinavian Journal of Work, Environment & Health*.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

Because the journal publishes research papers and reviews bearing on occupational health and safety, OHP also makes up part of the *SJWEH*'s coverage.

Find this resource:

- ***Work & Stress*.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

Established in 1987 and now published by the European Academy of Occupational Health Psychology (EAOHP), *Work & Stress* is the oldest journal exclusively devoted to OHP. The journal publishes research on the relationship of work-related psychosocial factors and organizational conditions to health, safety, and well-being.

Find this resource:

History of OHP

A number of sources, such as [Barling and Griffiths 2011](#), [Sauter and Hurrell 1999](#), and [Schonfeld and Chang 2017](#), cover the prehistory and history of OHP. Those sources examine the ideas of thinkers including Smith, Engels, Marx, Durkheim, and Weber. The sources describe those thinkers' views on the impact of monotonous working conditions, industrialization, downturns and upturns in the business cycle, bureaucratization, and the historic shift of the place of work in people's lives, a shift away from the idea that work is a vocation or calling toward a highly rationalized concept of work. These sources underline the influence of mechanization and standardization associated with Ford and Taylor, the ideas associated with the human relations movement (e.g., informal relationships among workers), Jahoda, Lazarsfeld, and Zeisel's work on the impact of unemployment on well-being, and the impact of war on soldiers. The sources also examine research developments after World War II that more immediately anticipate the emergence of OHP. One such development is the research of [Trist and Bamforth 1951](#) on the impact of increased mechanization in the British mining industry, and the concomitant decrease in worker autonomy. Research by [Selye 1956](#) on "the stress of life" and the author's efforts to build on earlier work by Claude Bernard and Walter B. Cannon are important influences in OHP circles. The idea that rigorously controlled research (e.g., [Friedman, et al. 1958](#)) on the impact of job stress can be conducted is also part of the foundation of OHP. Research described in [Lazarus 1966](#) on stress and coping in life in general is part of the foundation of OHP. Important research on job stress like [Levi 1972](#) and [Frankenhaeuser and Gardell 1976](#) would begin to flow out of Sweden. [Freudenberger 1974](#) is the first article on job-related burnout to be published in a social science journal. It would take on significance for OHP. [Karasek 1979](#) concerns decision latitude and workload and is a fountainhead of research in OHP. [Sauter and Hurrell 2017](#) describes the history of efforts, beginning in the 1970s, to develop a conceptualization of what is meant by OHP.

- **Barling, J., and A. Griffiths. 2011. A history of occupational health psychology. In *Handbook of occupational health psychology*. Edited by J. C. Quick and L. Tetrick, 21–34. Washington, DC: American Psychological Association.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The authors provide a history of OHP beginning with Engels and Marx, progressing through to Taylor's concept of scientific management, the Hawthorne studies, Maslow, and Herzberg. Their chapter covers later developments in Scandinavia, research in the United Kingdom, Karasek's demand-control model, research on unemployment, and the development of institutions that play a role in sustaining OHP.

Find this resource:

- **Frankenhaeuser, M., and B. Gardell. 1976. Underload and overload in working life: Outline of a multidisciplinary approach. *Journal of Human Stress* 2:35–46.**

DOI: [10.1080/0097840X.1976.9936068](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This article describes research on male blue-collar workers. The findings link work at monotonous, machine-paced jobs to high levels of adrenaline and noradrenaline as well as psychosomatic symptoms.

Find this resource:

- **Freudenberger, H. J. 1974. Staff burn-out. *Journal of Social Issues* 30:159–165.**

DOI: [10.1111/j.1540-4560.1974.tb00706.x](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

In a qualitative study of individuals who volunteered to work in a free clinic for drug addicts, Freudenberger describes job-related exhaustion and demoralization in fellow volunteers *and* in himself. He terms the phenomenon *burnout*.

Find this resource:

- **Friedman, M., R. H. Rosenman, and V. Carroll. 1958. Changes in the serum cholesterol and blood clotting time in men subjected to cyclic variation of occupational stress. *Circulation* 17:852–861.**

DOI: [10.1161/01.CIR.17.5.852](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This study demonstrates, using two groups of accountants with slightly different reporting deadline patterns, the connection between the intensity of job stress, on one hand, and serum cholesterol levels and blood clotting time, on the other.

Find this resource:

- **Karasek, R. A. 1979. Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly* 24.2: 285–308.**

DOI: [10.2307/2392498](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The paper outlines the importance of decision latitude and job demands in affecting the well-being of workers. The model the paper outlines is very influential in OHP.

Find this resource:

- **Lazarus, R. S. 1966. *Psychological stress and the coping process*. New York: McGraw-Hill.**
Save Citation »Export Citation »E-mail Citation »
Lazarus describes a general model of how individuals respond to a “new stimulus configuration.” An individual’s response is informed by motives, personality, past learning, etc. The individual engages in an appraisal process evaluating the stimulus configuration for threat level or anticipated harm. If a threat appraisal emerges, the individual may engage in coping behaviors, that is, “strategies for dealing with threat.”
Find this resource:
- **Levi, L. 1972. Stress and distress in response to psychosocial stimuli: Laboratory and real life studies on sympathoadrenomedullary and related reactions. *Acta Medica Scandinavica Supplementum* 528:1–16.**
Save Citation »Export Citation »E-mail Citation »
Levi reports on a study that shows that a change from hourly wages to piecework is associated with increased output and increased adrenaline and noradrenaline. He also reports that a reverse change back to hourly wages is associated with a reversal of the effect.
Find this resource:
- **Sauter, S. L., and J. J. Hurrell Jr. 1999. Occupational health psychology: Origins context and direction. *Professional Psychology, Research and Practice* 30:117–122.**
DOI: 10.1037/0735-7028.30.2.117**Save Citation »Export Citation »E-mail Citation »**
This article traces the historical roots of OHP beginning with the United Kingdom’s World War I Industrial Fatigue Research Board and the Hawthorne studies. The authors express concern for the intensification of organizational demands on the health of workers and the need for OH psychologists to help develop ways to mitigate job stress.
Find this resource:
- **Sauter, S. L., and J. J. Hurrell Jr. 2017. Occupational health contributions to the development and promise of occupational health psychology. *Journal of Occupational Health Psychology* 22:251–258.**
DOI: 10.1037/ocp0000088**Save Citation »Export Citation »E-mail Citation »**
The authors describe foundational efforts in the field of occupational health and safety, beginning in the 1970s, to conceptualize and develop OHP, and trace the origin of the term OHP to David Ferguson (see [Ferguson 1977](#) and [Ferguson 1981](#), both cited under [The Origin of the Term Occupational Health Psychology](#)). They also describe the role of the National Institute for Occupational Safety and Health (NIOSH) in the emergence of OHP.
Find this resource:
- **Schonfeld, I. S., and C.-H. Chang. 2017. *Occupational health psychology: Work, stress, and health*. New York: Springer Publishing.**
Save Citation »Export Citation »E-mail Citation »
The first chapter examines an arc of thought and research that extends from the 18th and 19th centuries (Smith, Engels, and Marx) through the first eighty years of the 20th century (Durkheim, Weber, Taylor, Ford, Mayo, Jahoda, Stouffer, Trist and Bamforth, Cannon, Selye, Lazarus, Levi, Chinoy, Kornhauser, Freudenberg, Karasek). The foundation for the development of OHP is found in the efforts of those thinkers.
Find this resource:
- **Selye, H. 1956. *The stress of life*. New York: McGraw-Hill.**
Save Citation »Export Citation »E-mail Citation »
An endocrinologist, Selye, building on Cannon’s earlier research and ideas about homeostasis, develops models of an organism’s response to external disturbances. He uses the term *stress* to outline a syndrome that includes the nonspecific responses to disturbances. He underlines the importance of the pituitary’s secretion of ACTH to signal the adrenal glands to secrete adrenaline in response to external stressors.
Find this resource:
- **Trist, E. L., and K. W. Bamforth. 1951. Some social and psychological consequences of the longwall method of coal getting. *Human Relations* 4:3–38.**
DOI: 10.1177/001872675100400101**Save Citation »Export Citation »E-mail Citation »**
In a historically important article, the authors describe changes in the British coal mining industry from work in which miners operated like artisans who see their job through from beginning to end. The changes in the industry led to jobs becoming “fractionated” into highly repetitious discrete tasks. The article describes the psychological impact of this reduction in miner autonomy.
Find this resource:

The Origin of the Term *Occupational Health Psychology*

The origin of the terms *occupational health psychology* and *occupational health psychologist* are several, and include Ferguson 1977, Ferguson 1981, Feldman 1985, Everly 1986, and Raymond, et al. 1990. Judging from those papers' bibliographies and other sources, except for Everly and Feldman, none of the later authors knew about earlier authors' use of the terms.

- Everly, G. S., Jr. 1986. An introduction to occupational health psychology. In *Innovations in clinical practice: A source book*. Vol. 5. Edited by P. A. Keller and L. G. Ritt, 331–338. Sarasota, FL: Professional Resource Exchange.

Save Citation » Export Citation » E-mail Citation »

Everly uses the term *occupational health psychology*, and regards the field as a subdiscipline of health psychology. He advances the view that the purpose of OHP is to prevent, diagnose, and treat “physical disease and dysfunction” developing out of workplace conditions.

Find this resource:

- Feldman, R. H. L. 1985. Promoting occupational safety and health. In *Occupational health promotion: Health behavior in the workplace*. Edited by G. Everly and R. H. L. Feldman, 188–207. New York: Wiley.

Save Citation » Export Citation » E-mail Citation »

Feldman sees a role for “occupational health psychologists” as part of a team that includes industrial hygienists, occupational physicians, and occupational health educators. The goal of the team is to reduce or eliminate work-related injuries and illnesses.

Find this resource:

- Ferguson, D. 1977. The psychologist and occupational health. In *Proceedings of the Annual Conference, Ergonomics Society of Australia and New Zealand*. Edited by John Brebner, 41–50. Adelaide, Australia: Department of Psychology, Univ. of Adelaide.

Save Citation » Export Citation » E-mail Citation »

The first to use the term *occupational health psychologist*, Ferguson advances the idea that such psychologists must play a role in the prevention and reduction of work-related sickness and injury. For example, the OH psychologist could play a role in improving work design as it pertains to health. The occupational health psychologist should possess broad general knowledge of research in organizational, social, clinical, and occupational psychology, as well as ergonomics.

Find this resource:

- Ferguson, D. 1981. Occupational health in Australia—debit and credit. *Australian and New Zealand Journal of Public Health* 5.1: 53–70.

Save Citation » Export Citation » E-mail Citation »

In this second article by Ferguson, he uses the term *occupational health psychology* for the first time in print without going into as much detail as he does in his 1977 paper.

Find this resource:

- Raymond, J. S., D. W. Wood, and W. K. Patrick. 1990. Psychology doctoral training in work and health. *American Psychologist* 45:1159–1161.

DOI: 10.1037/0003-066X.45.10.1159 Save Citation » Export Citation » E-mail Citation »

Published in a journal received by every member of the American Psychological Association, this article is perhaps the most influential in coining the term *occupational health psychology*. The authors underscore the idea that psychologists have an obligation to help make workplaces healthier. The authors also call for the development of doctoral-level training programs in OHP.

Find this resource:

OHP-Related Models of Job Stress

Theoretical models of job stress have been developed for the purpose of explaining how psychosocial working conditions can affect mental and physical health. The two most prominent theoretical models are the demand-control (DC) and effort-reward imbalance (ERI) models (Schonfeld and Chang 2017). The DC model has for many years been a dominant theory in OHP (Ganster and Perrewé 2011). Karasek 1979 and Karasek and Theorell 1990 outline what has become known as the DC model of job stress. The model underlines the importance of decision latitude

(control) and psychological workload (job demands). “Job strain” arises from high levels of job demands combined with little control. Strain refers to adverse health effects. An extended version of the model found in [Johnson, et al. 1989](#) includes support from coworkers and supervisors. The extended model is known as the demand-control-support (DCS) or iso-strain model. The DCS model recognizes that low support adds to the adverse health effects of low control and high workload. The ERI model associated with [Siegrist 1996](#) underscores the baleful effects of an imbalance between, on one hand, efforts a worker puts into his or her job and, on the other, rewards the worker receives in return. Job rewards can be both tangible *and* intangible. An elaborated version of the model in [Siegrist, et al. 2004](#) includes physical demands as part of the assessment of effort. Other models of job stress include the person-environment (P-E) fit model, conservation of resources (COR) theory, and the job demands-resources (JD-R) model. The P-E fit model, as discussed in [Caplan, et al. 1975](#), regards an incompatibility between worker characteristics (e.g., skills and needs) and what the work environment requires as exerting adverse effects on well-being. COR theory, as outlined in [Hobfoll and Shirom 2001](#), regards human life as operating on the basis of a resource economy, with people investing resources to protect other resources or to acquire new resources. Resources are protective, and stressful events such as job loss lead to resource drain, including a drain on personal energy. The DC and DCS models and COR theory are the foundation of the JD-R model, as described in [Demerouti, et al. 2001](#). The demands part of the model approximately coincides with the demand part of the DC and DCS models. The resources component, however, embraces decision latitude, the supportiveness of not just coworkers and managers but also of family and nonwork friends. Other resources include equipment, task variety, personal skills, among others.

- **Caplan, R. D., S. Cobb, J. R. P. French Jr., R. V. Harrison, and S. R. Pinneau Jr. 1975. *Job demands and worker health: Main effects and occupational differences*. U.S. Department of Health, Education, and Welfare, Publication No. [NIOSH] 75-160. Washington, DC: U.S. Government Printing Office.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

Partly inspired by Darwinian theory, this monograph spells out the P-E fit model and describes initial research organized around the model. The authors also show concern for minimizing bias in the reporting of workers on job conditions. Also published by the Institute for Social Research, Univ. of Michigan, Ann Arbor, 1980.

Find this resource:

- **Demerouti, E., A. B. Bakker, F. Nachreiner, and W. B. Schaufeli. 2001. The job demands-resources model of burnout. *Journal of Applied Psychology* 86:499-512.**

DOI: [10.1037/0021-9010.86.3.499](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The paper describes the JD-R model and links high demands to the exhaustion component of burnout and low resources to the disengagement component.

Find this resource:

- **Ganster, D. C., and P. L. Perrewé. 2011. Theories of occupational stress. In *Handbook of occupational health psychology*. 2d ed. Edited by J. C. Quick and L. E. Tetrick, 37-53. Washington, DC: American Psychological Association.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This chapter surveys several theories prominent in OHP, including P-E fit, DC, COR, and ERI. The authors underscore the importance of objectively characterizing work environments in connection to those theories. Such efforts will help us better understand (a) why appraisals of similar environmental demands vary among workers and (b) how to best intervene to make workplaces healthier.

Find this resource:

- **Hobfoll, S. E., and A. Shirom. 2001. Conservation of resources theory: Applications to stress and management in the workplace. In *Handbook of organizational behavior*. 2d ed. Edited by R. T. Golembiewski, 57-80. New York: Marcel Dekker.**

[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

This chapter details COR theory, and illustrates how it can be applied to reducing stress at work, particularly with regard to burnout.

Find this resource:

- **Johnson, J. V., E. M. Hall, and T. Theorell. 1989. Combined effects of job strain and social isolation on cardiovascular disease morbidity and mortality in a random sample of the Swedish male working population. *Scandinavian Journal of Work, Environment & Health* 15:271-279.**

DOI: [10.5271/sjweh.1852](#)[Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »

The article by Johnson et al. extends the DC model to include work-related social support, creating the DCS or iso-strain model.

Find this resource:

- **Karasek, R. A. 1979. Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly* 24.2: 285–308.**

DOI: [10.2307/2392498](https://doi.org/10.2307/2392498)[Save Citation »Export Citation »E-mail Citation »](#)

Karasek's pioneering paper outlines the DC model that has become so influential in OHP. The research described in the paper shows an application of the model to research on the connection of working conditions to mental health.

Find this resource:

- **Karasek, R. A., and T. Theorell. 1990. *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.**

[Save Citation »Export Citation »E-mail Citation »](#)

In addition to extending the DC model to a third dimension, social support, the authors note that active jobs (jobs with high workloads and high levels of control) promote learning, which in turn leads to feelings of mastery and skill acquisition, factors that help workers meet job-related demands that could otherwise induce psychological strain. By contrast, passive jobs (jobs with low workloads and low control) discourage learning.

Find this resource:

- **Schonfeld, I. S., and C.-H. Chang. 2017. *Occupational health psychology: Work, stress, and health*. New York: Springer.**

[Save Citation »Export Citation »E-mail Citation »](#)

The third and fourth chapters describe the DC, DCS, JD-R, and ERI models as they pertain to the relationship of working conditions to depression, psychological distress, alcohol use, burnout, cardiovascular disease, and musculoskeletal problems.

Find this resource:

- **Siegrist, J. 1996. Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology* 1:27–41.**

DOI: [10.1037/1076-8998.1.1.27](https://doi.org/10.1037/1076-8998.1.1.27)[Save Citation »Export Citation »E-mail Citation »](#)

Siegrist maps out the features of the ERI model, linking it to an idea in sociology, namely, the fundamental importance of the norm of reciprocity in human relationships. Violations of the norm are thought to contribute to psychological distress.

Find this resource:

- **Siegrist, J., D. Starke, T. Chandola, et al. 2004. The measurement of effort-reward imbalance at work: European comparisons. *Social Science & Medicine* 58:1483–1499.**

DOI: [10.1016/S0277-9536\(03\)00351-4](https://doi.org/10.1016/S0277-9536(03)00351-4)[Save Citation »Export Citation »E-mail Citation »](#)

In this paper, Siegrist and colleagues elaborate the ERI model further by integrating worker overcommitment into the model.

Find this resource:

Implications of Psychosocial Working Conditions for Mental Health

There exists a variety of working conditions, including no working conditions at all. In a massive meta-analysis, [Paul and Moser 2009](#) documents the adverse effects of involuntary job loss on mental health. Other research, like [Milner, et al. 2013](#) and [Milner, et al. 2014](#), indicates that job loss is a risk factor for suicide. Compared to other theoretical models, the demand-control (DC) and demand-control-support (DCS) models are the models most often employed in connection to research on work and mental health. Literature reviews and meta-analyses of the highest quality longitudinal studies like [Häusser, et al. 2010](#), [Madsen, et al. 2017](#), and [Theorell, et al. 2015](#) link high demands, low control, and low support either singly or in some combination to psychological symptoms or mental disorders. [Aronsson, et al. 2017](#) links low levels of job control to emotional exhaustion, the core of burnout, although [Bianchi, et al. 2018](#) suggests that burnout is a depressive syndrome. [Luchman and González-Morales 2013](#) provides comparative evidence on the DCS and job demands-resources (JD-R) models. [Nieuwenhuijsen, et al. 2010](#) reports evidence bearing on the relation of effort-reward imbalance (ERI) to psychological distress. While research apart from studies that employ the DC, DCS, and ERI models does not receive as much attention, evidence indicates that there are harmful mental health effects associated with other psychosocial workplace factors, for example, organizational injustice and job insecurity ([Nieuwenhuijsen, et al. 2010](#)).

- **Aronsson, G., T. Theorell, T. Grape, et al. 2017. A systematic review including meta-analysis of work environment and burnout symptoms. *BMC Public Health* 17:264.**
DOI: [10.1186/s12889-017-4153-7](https://doi.org/10.1186/s12889-017-4153-7)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
The meta-analysis links job control and low workplace support to increased emotional exhaustion, the core component of burnout.
Find this resource:
- **Bianchi, R., I. S. Schonfeld, and E. Laurent. 2018. Burnout syndrome and depression. In *Understanding depression: Vol. 2, Clinical manifestations, diagnosis and treatment*. Edited by Y.-K. Kim, 187–202. Singapore: Springer Nature.**
[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
The authors describe mounting evidence that burnout, an important dependent variable in OHP research, is a depressive syndrome: burnout and depression symptom scales are very highly correlated; burnout and depression have similar nomological networks and neurobiological profiles; and individuals who score very high on burnout scales overwhelmingly meet criteria for diagnoses of depression.
Find this resource:
- **Häusser, J. A., A. Mojzisch, M. Niesel, and S. Schulz-Hardt. 2010. Ten years on: A review of recent research on the job demand-control (-support) model and psychological well-being. *Work & Stress* 24:1–35.**
DOI: [10.1080/02678371003683747](https://doi.org/10.1080/02678371003683747)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
The evidence compiled in this review paper indicates that, on balance, high levels of demands and low levels of control have adverse effects on distress, depressive symptoms, and emotional exhaustion.
Find this resource:
- **Luchman, J. N., and M. González-Morales. 2013. Demands, control, and support: A meta-analytic review of work characteristics interrelationships. *Journal of Occupational Health Psychology* 18:37–52.**
DOI: [10.1037/a0030541](https://doi.org/10.1037/a0030541)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
This meta-analysis finds that the DCS model, compared to the JD–R model, better explains the onset of burnout.
Find this resource:
- **Madsen, I. H., S. T. Nyberg, L. L. Magnusson Hanson, et al. 2017. Job strain as a risk factor for clinical depression: Systematic review and meta-analysis with additional individual participant data. *Psychological Medicine* 47:1342–1356.**
DOI: [10.1017/S003329171600355X](https://doi.org/10.1017/S003329171600355X)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
This paper, which includes both a systematic review and a meta-analysis, indicates that job strain (the combination of high psychological workload and low control at work) predicts elevated risk of clinical depression.
Find this resource:
- **Milner, A., A. Page, and A. D. LaMontagne. 2013. Long-term unemployment and suicide: A systematic review and meta-analysis. *PLoS One* 8.1: e51333.**
DOI: [10.1371/journal.pone.0051333](https://doi.org/10.1371/journal.pone.0051333)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
This combined review and meta-analysis provides evidence that bears on the impact of long-term unemployment on suicide risk, and indicates that the risk is highest earlier in the period of unemployment rather than later.
Find this resource:
- **Milner, A., A. Page, and A. D. LaMontagne. 2014. Cause and effect in studies on unemployment, mental health and suicide: A meta-analytic and conceptual review. *Psychological Medicine* 44:909–917.**
DOI: [10.1017/S0033291713001621](https://doi.org/10.1017/S0033291713001621)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
Milner et al.'s meta-analysis shows that while exposure to unemployment is associated with suicide risk, controlling for prior mental health reduces that risk, but it does not reduce it to nonsignificance. Unemployment-related suicide risk is higher in males than in females.
Find this resource:
- **Nieuwenhuijsen, K., D. Bruinvels, and M. Frings-Dresen. 2010. Psychosocial work environment and stress-related disorders, a systematic review. *Occupational Medicine* 60:277–286.**
DOI: [10.1093/occmed/kqq081](https://doi.org/10.1093/occmed/kqq081)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)
This review links high workload, low job control, low coworker and supervisor support, job insecurity, work-related justice (fairness), and ERI to the incidence of high levels of psychological distress and stress-related disorders.
Find this resource:

- **Paul, K. I., and K. Moser. 2009. Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior* 74:264–282.**
DOI: [10.1016/j.jvb.2009.01.001](https://doi.org/10.1016/j.jvb.2009.01.001) [Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »
The comprehensive meta-analyses in this paper underline the relationship between involuntary job loss and mental health problems. The review also undercuts the idea that involuntary job loss followed some time later by re-employment somehow represents an opportunity for personal growth.
Find this resource:
- **Theorell, T., A. Hammarström, G. Aronsson, et al. 2015. A systematic review including meta-analysis of work environment and depressive symptoms. *BMC Public Health* 15:738.**
DOI: [10.1186/s12889-015-1954-4](https://doi.org/10.1186/s12889-015-1954-4) [Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »
The findings from this meta-analysis indicate that decision latitude, job strain, and workplace bullying predict increases in depressive symptom levels over time.
Find this resource:

Implications of Psychosocial Working Conditions for Cardiovascular Disease, Stroke, and Mortality

Wardle, et al. 2011 connects psychosocial working conditions to weight gain, and Fransson, et al. 2012 links working conditions to reduced physical activity; weight gain and inactivity are risk factors for cardiovascular disease (CVD). High-quality studies such as Kivimäki, et al. 2006 and Kivimäki, et al. 2012 link high-strain jobs to CVD. Fishta and Backé 2015 links the components of job strain, heavy workload, and low job control to CVD. Huang, et al. 2015 links job strain to stroke. Other research efforts, like Dragano, et al. 2017 and Fishta and Backé 2015, connect effort-reward imbalance (ERI) to elevated CVD risk. Virtanen, et al. 2013 indicates that job insecurity predicts CVD. Roelfs, et al. 2011 shows that involuntary job loss is associated with increased risk of [all-cause] mortality. Research examining the relation of psychosocial working conditions to cancer (Heikkilä, et al. 2013) and type 2 diabetes (Sui, et al. 2016) largely reveals null results, although there is evidence that job insecurity is related to the incidence of diabetes (Ferrie, et al. 2016).

- **Dragano, N., J. Siegrist, S. T. Nyberg, et al. 2017. Effort-reward imbalance at work and incident coronary heart disease: A multi-cohort study of 90,164 individuals. *Epidemiology* 28:619–626.**
DOI: [10.1097/EDE.0000000000000666](https://doi.org/10.1097/EDE.0000000000000666) [Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »
This paper describes a massive meta-analysis involving data collected by eleven independent research teams. The findings link ERI to later coronary disease.
Find this resource:
- **Ferrie, J. E., M. Virtanen, M. Jokela, et al. 2016. Job insecurity and risk of diabetes: A meta-analysis of individual participant data. *Canadian Medical Association Journal* 188.17–18: E447–E455.**
DOI: [10.1503/cmaj.150942](https://doi.org/10.1503/cmaj.150942) [Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »
This meta-analysis involving nineteen prospective studies shows that job insecurity is modestly related to elevated risk of incident diabetes, controlling for background factors.
Find this resource:
- **Fishta, A., and E. Backé. 2015. Psychosocial stress at work and cardiovascular diseases: An overview of systematic reviews. *International Archives of Occupational and Environmental Health* 88:997–1014.**
DOI: [10.1007/s00420-015-1019-0](https://doi.org/10.1007/s00420-015-1019-0) [Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »
This review-of-reviews examines six systematic reviews and two meta-analyses. The evidence, on balance, links work-related psychosocial stress to elevated risk of CVD in men. The evidence in women is less consistent.
Find this resource:
- **Fransson, E., K. Heikkilä, S. Nyberg, et al. 2012. Job strain as a risk factor for leisure-time physical inactivity: An individual-participant meta-analysis of up to 170,000 men and women: The IPD-Work Consortium. *American Journal of Epidemiology* 176:1078–1089.**
DOI: [10.1093/aje/kws336](https://doi.org/10.1093/aje/kws336) [Save Citation](#) » [Export Citation](#) » [E-mail Citation](#) »
This individual-participant meta-analysis involving six cohort studies links high-strain (low control and high workload) and passive jobs (low control and low workload) to later physical inactivity. Low control by itself is also related to later physical inactivity. The effect sizes are modest.

Find this resource:

- **Heikkilä, K., S. T. Nyberg, T. Theorell, et al. 2013. Work stress and risk of cancer: Meta-analysis of 5700 incident cancer events in 116,000 European men and women. *BMJ (Clinical Research Ed.)* 346:f165.**

DOI: [10.1136/bmj.f165](https://doi.org/10.1136/bmj.f165)[Save Citation »Export Citation »E-mail Citation »](#)

This individual-participant meta-analysis involving twelve cohort studies explores the possibility of a link between job strain and cancer risk, and finds null results.

Find this resource:

- **Huang, Y., S. Xu, J. Hua, et al. 2015. Association between job strain and risk of incident stroke: A meta-analysis. *Neurology* 85:1648–1654.**

DOI: [10.1212/WNL.0000000000002098](https://doi.org/10.1212/WNL.0000000000002098)[Save Citation »Export Citation »E-mail Citation »](#)

This meta-analysis involving six prospective studies indicates that high job strain is related to moderately elevated risk of stroke.

Find this resource:

- **Kivimäki, M., S. Nyberg, G. Batty, et al. 2012. Job strain as a risk factor for coronary heart disease: A collaborative meta-analysis of individual participant data. *Lancet* 380:1491–1497.**

DOI: [10.1016/S0140-6736\(12\)60994-5](https://doi.org/10.1016/S0140-6736(12)60994-5)[Save Citation »Export Citation »E-mail Citation »](#)

In this massive individual-participant meta-analysis ($n > 197,000$) involving thirteen cohort studies, Kivimäki, et al. find that job strain is related to a 20–30 percent increased risk of coronary disease, controlling for conventional risk factors.

Find this resource:

- **Kivimäki, M., M. Virtanen, M. Elovainio, A. Kouvonen, A. Väänänen, and J. Vahtera. 2006. Work stress in the etiology of coronary heart disease: A meta-analysis. *Scandinavian Journal of Work, Environment & Health* 32.6: 431–442.**

DOI: [10.5271/sjweh.1049](https://doi.org/10.5271/sjweh.1049)[Save Citation »Export Citation »E-mail Citation »](#)

In this meta-analysis of fourteen cohort studies, job stress (e.g., job strain, effort-reward imbalance) is found to be related to a 50 percent excess risk of coronary disease, controlling for other risk factors.

Find this resource:

- **Roelfs, D. J., E. Shor, K. W. Davidson, and J. E. Schwartz. 2011. Losing life and livelihood: A systematic review and meta-analysis of unemployment and all-cause mortality. *Social Science & Medicine* 72:840–854.**

DOI: [10.1016/j.socscimed.2011.01.005](https://doi.org/10.1016/j.socscimed.2011.01.005)[Save Citation »Export Citation »E-mail Citation »](#)

In a meta-analysis involving forty-two studies, results indicate that involuntary job loss is related to a 60 percent higher risk of premature death.

Find this resource:

- **Sui, H., N. Sun, L. Zhan, X. Lu, T. Chen, and X. Mao. 2016. Association between work-related stress and risk for type 2 diabetes: A systematic review and meta-analysis of prospective cohort studies. *PLoS One* 11.8: e0159978.**

DOI: [10.1371/journal.pone.0159978](https://doi.org/10.1371/journal.pone.0159978)[Save Citation »Export Citation »E-mail Citation »](#)

This meta-analysis does not link work-related stress in the form of workload, control, and job strain to type 2 diabetes. However, when the analyses are limited to women, a modest link between job stress and diabetes can be found.

Find this resource:

- **Virtanen, M., S. Nyberg, G. Batty, et al. 2013. Perceived job insecurity as a risk factor for incident coronary heart disease: Systematic review and meta-analysis. *BMJ (Clinical Research Ed.)* 347:f4746.**

DOI: [10.1136/bmj.f4746](https://doi.org/10.1136/bmj.f4746)[Save Citation »Export Citation »E-mail Citation »](#)

Virtanen et al.'s meta-analysis involving seventeen cohort studies indicates that job insecurity is related to a 30 percent higher risk of CVD.

Find this resource:

- **Wardle, J., Y. Chida, E. L. Gibson, K. L. Whitaker, and A. Steptoe. 2011. Stress and adiposity: A meta-analysis of longitudinal studies. *Obesity* 19:771–778.**

DOI: [10.1038/oby.2010.241](https://doi.org/10.1038/oby.2010.241)[Save Citation »Export Citation »E-mail Citation »](#)

This meta-analysis of thirty-two prospective studies adduces evidence for the view that work-related psychosocial stressors predict modest weight gain.

Find this resource:

Implications of Psychosocial Working Conditions for Musculoskeletal Disorders

Although physical work (e.g., repetitive motion, bending, and lifting) is associated with musculoskeletal disorders (MSDs), high-quality research in the form of [Hauke, et al. 2011](#); [Kraatz, et al. 2013](#); and [Lang, et al. 2012](#) reveals a relationship between psychosocial working conditions (e.g., supportive coworkers, monotonous work) and the development of MSDs. [Eatough, et al. 2012](#) finds that psychosocial stressors such as role conflict, low job control, and poor safety-specific leadership contribute to psychological strain in employees; strain, in turn, is associated with higher levels of musculoskeletal injury. An ecological model described in [Swanson and Sauter 2006](#) integrates work-related factors in the physical and psychosocial environment to injury risk.

- **Eatough, E. M., J. D. Way, and C.-H. Chang. 2012. Understanding the link between psychosocial work stressors and work-related musculoskeletal complaints. *Applied Ergonomics* 43:554–563.**

DOI: [10.1016/j.apergo.2011.08.009](#) Save Citation » Export Citation » E-mail Citation »

The authors describe a mediational model in which job stressors affect emotional strain and emotional strain affects musculoskeletal complaints.

Find this resource:

- **Hauke, A., J. Flintrop, E. Brun, and R. Rugulies. 2011. The impact of work-related psychosocial stressors on the onset of musculoskeletal disorders in specific body regions: A review and meta-analysis of 54 longitudinal studies. *Work & Stress* 25:243–256.**

DOI: [10.1080/02678373.2011.614069](#) Save Citation » Export Citation » E-mail Citation »

In this meta-analysis, low workplace support predicts later pain in the neck and shoulder, upper extremities, and lower back, controlling for work-related physical load. Other risk factors predict pain in two of the three regions; these risk factors include low job control or low decision latitude, high job strain, and low job satisfaction.

Find this resource:

- **Kraatz, S., J. Lang, T. Kraus, E. Münster, and E. Ochsmann. 2013. The incremental effect of psychosocial workplace factors on the development of neck and shoulder disorders: A systematic review of longitudinal studies. *International Archives of Occupational and Environmental Health* 86:375–395.**

DOI: [10.1007/s00420-013-0848-y](#) Save Citation » Export Citation » E-mail Citation »

This systematic review of eighteen prospective or longitudinal studies indicates that work-related psychosocial stressors such as high workload, low control, and low coworker support predict, independently of job-related physical factors, neck and shoulder injury.

Find this resource:

- **Lang, J., E. Ochsmann, T. Kraus, and J. W. B. Lang. 2012. Psychosocial work stressors as antecedents of musculoskeletal problems: A systematic review and meta-analysis of stability-adjusted longitudinal studies. *Social Science & Medicine* 75:1163–1174.**

DOI: [10.1016/j.socscimed.2012.04.015](#) Save Citation » Export Citation » E-mail Citation »

In this meta-analysis, psychosocial workplace stressors such as low work-related support and monotonous work are related to increased risk of low back pain later on. Monotonous work and job strain predict neck and shoulder pain.

Find this resource:

- **Swanson, N. G., and S. L. Sauter. 2006. A multivariate evaluation of an office ergonomic intervention using longitudinal data. *Theoretical Issues in Ergonomics Science* 7:3–17.**

DOI: [10.1080/14639220512331335124](#) Save Citation » Export Citation » E-mail Citation »

Swanson and Sauter's complex model outlines the interconnections between psychosocial aspects of the work organization and the physical and biomechanical facets of work. For example, work organization stressors lead to psychological strain and physical demands lead to biomechanical strain; psychological strain further exacerbates biomechanical strain.

Find this resource:

Violence and Psychological Aggression in the Workplace

Workplace aggression is thought to be on a continuum ranging from the least harmful behavior, for example, an episode of discourteous behavior, to the most harmful, homicide ([Greenberg and Barling 1999](#)). [Bloch 1978](#) shows that violence or its threat can have both devastating physical and psychological effects on victims. [Schat, et al. 2006](#) demonstrates that aggression, particularly psychological aggression, is common in workplaces. The stress-

reaction model developed in Zapf, et al. 1996 bears on the impact of violence exposure on psychological functioning. Bowling and Beehr 2006 shows that psychological aggression can harm its victim. The "stress-as-offense-to-self" model developed in Semmer, et al. 2007 helps to explain the impact of psychological aggression on its victim. Work-related factors such as interpersonal conflict, role ambiguity and overload, situational constraints, work-related injustice, poor leadership, and job dissatisfaction are associated with harassment and other forms of psychological aggression (Bowling and Beehr 2006; Hershcovis, et al. 2007). Trait anger (Douglas and Martinko 2001; Hershcovis, et al. 2007; Spector 2011), negative affectivity (Hershcovis, et al. 2007; Spector 2011), and a history of aggression and alcohol use (Greenberg and Barling 1999) are individual factors that are related to an increased risk of workplace aggression. Other risk factors related to violence and psychological aggression in an organization are violence prevention climate (Spector, et al. 2015) and mistreatment climate (Yang, et al. 2014). Because these climate factors are controllable by management and, to some extent, employee organizations, they provide a means through which to intervene to reduce aggression.

- **Bloch, A. M. 1978. Combat neurosis in inner-city schools. *American Journal of Psychiatry* 135.10: 1189–1192.**
DOI: 10.1176/ajp.135.10.1189Save Citation »Export Citation »E-mail Citation »
Bloch's is a classic study of a consecutive series of teachers referred for psychiatric evaluation in the aftermath of an in-school incident involving assault or serious threat of harm (e.g., murder, rape). The findings suggest that, compared to teachers who are actual assault victims, teachers exposed to serious threats experience even greater psychological distress, including symptoms that in a later era would be considered PTSD-like.
Find this resource:
- **Bowling, N. A., and T. A. Beehr. 2006. Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *Journal of Applied Psychology* 91:998–1012.**
DOI: 10.1037/0021-9010.91.5.998Save Citation »Export Citation »E-mail Citation »
This paper provides a theoretical model of (a) the impact of workplace harassment on the psychological well-being of the victim and (b) the victim's response to the organization and the perpetrator. The foundation of the model is social psychological research on the norm of reciprocity and research associated with attribution theory. The paper's meta-analysis suggests that stressful work environments are related to victimization and that "a negative ambient work environment" likely encourages would-be harassers.
Find this resource:
- **Douglas, S. C., and M. J. Martinko. 2001. Exploring the role of individual differences in the prediction of workplace aggression. *Journal of Applied Psychology* 86:547–559.**
DOI: 10.1037/0021-9010.86.4.547Save Citation »Export Citation »E-mail Citation »
In a study of transportation workers and public school employees, results indicate that individual differences, including trait anger and attitudes toward revenge, are related to the risk of workplace aggression. The interaction of high levels of trait anger and low self-control is related to an elevated risk of aggression.
Find this resource:
- **Greenberg, L., and J. Barling. 1999. Predicting employee aggression against coworkers, subordinates and supervisors: The roles of person behaviors and perceived workplace factors. *Journal of Organizational Behavior* 20:897–913.**
DOI: 10.1002/(SICI)1099-1379(199911)20:6<897::AID-JOB975>3.0.CO;2-ZSave Citation »Export Citation »E-mail Citation »
In a study of worker-on-worker aggression, Greenberg and Barling note that workplace aggression, like aggression within families, can be placed on a continuum of harm. Alcohol use and a history of aggression are risk factors for worker-initiated aggression.
Find this resource:
- **Hershcovis, M., N. Turner, J. Barling, et al. 2007. Predicting workplace aggression: A meta-analysis. *Journal of Applied Psychology* 92:228–238.**
DOI: 10.1037/0021-9010.92.1.228Save Citation »Export Citation »E-mail Citation »
This meta-analysis involving fifty-nine samples indicates that individual difference factors (e.g., trait anger and negative affect) and situational factors (e.g., interpersonal conflict and situational constraints) are associated with workplace aggression.
Find this resource:
- **Schat, A. H., M. R. Frone, and E. Kelloway. 2006. Prevalence of workplace aggression in the U.S. workforce: Findings from a national study. In *Handbook of workplace violence*. Edited by E. K. Kelloway, J. Barling, and J. J. Hurrell Jr., 47–89. Thousand Oaks, CA: SAGE.**

DOI: 10.4135/9781412976947.n4Save Citation »Export Citation »E-mail Citation »

Using a national U.S. sample, Schat, et al. identify workplaces by the extent to which workers are exposed to physical and psychological aggression.

Find this resource:

- Semmer, N. K., N. Jacobshagen, L. L. Meier, and A. Elfering. 2007. Occupational stress research: The “stress-as-offense-to-self” perspective. In *Occupational health psychology: European perspectives on research, education and practice*. Edited by J. Houmont and S. McIntyre, 43–60. Maia, Portugal: ISMAI.

Save Citation »Export Citation »E-mail Citation »

Building on the work of Lazarus and COR theory, the model (“theoretical framework”) the authors develop suggests that psychological aggression can wound an individual’s self-esteem, a central psychological resource.

Find this resource:

- Spector, P. E. 2011. The relationship of personality to counterproductive work behavior (CWB): An integration of perspectives. *Human Resource Management Review* 21:342–352.

DOI: 10.1016/j.hrmr.2010.10.002Save Citation »Export Citation »E-mail Citation »

Spector integrates a broad swath of the research literature and relates a number of personality dimensions to counterproductive workplace behaviors. The personality dimensions include negative affectivity and trait anger. Other, less studied, factors include hostile attribution bias and narcissism.

Find this resource:

- Spector, P. E., L. Yang, and Z. E. Zhou. 2015. A longitudinal investigation of the role of violence prevention climate in exposure to workplace physical violence and verbal abuse. *Work & Stress* 29:325–340.

DOI: 10.1080/02678373.2015.1076537Save Citation »Export Citation »E-mail Citation »

A specific aspect of organizational climate, namely, violence prevention climate, affects the risk of violence and abuse. The climate of interest in this study affects the risk of hospital nurses becoming victims of violence.

Find this resource:

- Yang, L. -Q., D. E. Caughlin, M. W. Gazica, D. M. Truxillo, and P. E. Spector. 2014. Workplace mistreatment climate and potential employee and organizational outcomes: A meta-analytic review from the target’s perspective. *Journal of Occupational Health Psychology* 19:315–335.

DOI: 10.1037/a0036905Save Citation »Export Citation »E-mail Citation »

The meta-analysis, which involves thirty-six samples, indicates that psychological mistreatment climate is related to employee exposure to psychological aggression. An organizational climate that regards mistreatment negatively is more likely to tamp down interpersonal aggression.

Find this resource:

- Zapf, D., C. Dormann, and M. Frese. 1996. Longitudinal studies in organizational stress research: A review of the literature with reference to methodological issues. *Journal of Occupational Health Psychology* 1:145–169.

DOI: 10.1037/1076-8998.1.2.145Save Citation »Export Citation »E-mail Citation »

In the authors’ model, the impact of violence exposure on psychological dysfunction is approximately commensurate with the severity, exposure time, and unpredictability of the act.

Find this resource:

Occupational Safety

Both workers and employers are concerned about workplace safety and accidents. Aspects of safety include safety behaviors and safety outcomes (actual accidents and near-misses). Evidence compiled in Christian, et al. 2009 and Beus, et al. 2015 indicates that the personality dimensions conscientiousness and agreeableness are associated with higher levels of safety behavior. By contrast, Beus, et al. 2015 shows that extraversion is associated with lower levels of safety behavior. Christian, et al. 2009 indicates that employee safety motivation is related to safety compliance and accident risk. Regulatory focus theory, as outlined in Lanaj, et al. 2012, concerns how individuals regulate their own behavior with regard to satisfying important needs, and underlines the constructs of *promotion focus* (involves need for advancement) and *prevention focus* (involves security needs). Meta-analytic findings indicate that prevention focus is moderately positively related to safety performance and promotion focus is weakly but significantly negatively related to safety performance (Lanaj, et al. 2012). In addition to individual characteristics, a number of job characteristics are associated with safety performance. Meta-analyses in Nahrgang, et al. 2011 indicate that increasing job demands and job complexity are associated with accidents, injuries, adverse safety events (e.g., near-misses), and unsafe behaviors. Mental, physical, and muscular fatigue are associated with

occupational accidents. Fatigue-related accidents in jobs in almost all sectors of the economy increase when individuals operate outside conventional work hours (Boivin and Boudreau 2014; Fischer, et al. 2017).

- **Beus, J. M., L. Y. Dhanani, and M. A. McCord. 2015. A meta-analysis of personality and workplace safety: Addressing unanswered questions. *Journal of Applied Psychology* 100:481–498.**

DOI: [10.1037/a0037916](https://doi.org/10.1037/a0037916) Save Citation » Export Citation » E-mail Citation »

In this paper, meta-analyses link personality factors and safety-related outcomes. The relation of personality factors (e.g., conscientiousness, agreeableness, extraversion, and neuroticism) to accidents is thought to be partly mediated by the influence of those factors on the propensity to engage in unsafe behaviors.

Find this resource:

- **Boivin, D. B., and P. Boudreau. 2014. Impacts of shift work on sleep and circadian rhythms. *Pathologie Biologie* 62:292–301.**

DOI: [10.1016/j.patbio.2014.08.001](https://doi.org/10.1016/j.patbio.2014.08.001) Save Citation » Export Citation » E-mail Citation »

This review article underscores the impact of shift work on circadian rhythms. The impact is not straightforward, and is affected by conditions such as the number of hours consecutively worked and the timing of rest periods. Greater sleepiness occurs during night shifts, and is especially high at the end of the shift. Sleepiness impairs vigilance and performance, and can lead to a worker involuntarily falling asleep at work or on the drive home after a night shift.

Find this resource:

- **Christian, M. S., J. C. Bradley, J. C. Wallace, and M. J. Burke. 2009. Workplace safety: A meta-analysis of the roles of person and situation factors. *Journal of Applied Psychology* 94:1103–1127.**

DOI: [10.1037/a0016172](https://doi.org/10.1037/a0016172) Save Citation » Export Citation » E-mail Citation »

Meta-analyses show that conscientiousness, internal locus of control, and safety motivation are positively related to safety behaviors. Risk-taking is negatively related to safety behaviors. Model-building efforts suggest that safety motivation mediates the relationship between conscientiousness and safety behaviors.

Find this resource:

- **Fischer, D., D. A. Lombardi, S. Folkard, J. Willetts, and D. C. Christiani. 2017. Updating the “Risk Index”: A systematic review and meta-analysis of occupational injuries and work schedule characteristics. *Chronobiology International* 34.10: 1423–1438.**

DOI: [10.1080/07420528.2017.1367305](https://doi.org/10.1080/07420528.2017.1367305) Save Citation » Export Citation » E-mail Citation »

Meta-analyses indicate that the risk of injury is highest during the night shift. Other meta-analytic data reveal that as the number of consecutive shifts and shift length increase, injury risk increases.

Find this resource:

- **Lanaj, K., C.-H. Chang, and R. E. Johnson. 2012. Regulatory focus and work-related outcomes: A meta-analysis. *Psychological Bulletin* 138:998–1034.**

DOI: [10.1037/a0027723](https://doi.org/10.1037/a0027723) Save Citation » Export Citation » E-mail Citation »

In this series of meta-analyses prevention focus and promotion focus are linked to a variety of variables (e.g., personality, counterproductive work behaviors). In a series of meta-analyses, the authors show prevention focus to be positively related to safety performance above the contribution of more distal factors such as conscientiousness.

Find this resource:

- **Nahrgang, J. D., F. P. Morgeson, and D. A. Hofmann. 2011. Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology* 96:71–94.**

DOI: [10.1037/a0021484](https://doi.org/10.1037/a0021484) Save Citation » Export Citation » E-mail Citation »

In a series of meta-analyses, Nahrgang et al. examine the relationship of job demands and job resources to safety and other outcomes (e.g., engagement, job satisfaction, burnout). The findings bearing on safety reveal a robust relationship between job demands (e.g., noise, dust, hazardous equipment), on one hand, and accidents, injuries, and adverse events (e.g., near-misses), on the other. Burnout, physical demands, and task complexity are also related to risk of accidents, injuries, and adverse events.

Find this resource:

Work-Family Balance

Work-family balance is a complex area of study because work can interfere with family life in many ways, and family life can interfere with work. Moreover, conditions in one domain could also enhance conditions in the other. Several family- and work-related factors are associated with work-family conflict (WFC). Meta-analytic evidence compiled in [Michel, et al. 2011](#) indicates that family-role stressors (e.g., parental demands, childcare needs, parental/spousal role ambiguity) and heavy family role demands (e.g., having a disabled child) are related to WFC. Meta-analytic evidence in [Byron 2005](#) and [Michel, et al. 2011](#) show that work-related stressors such as role conflict, role ambiguity, and role overload are associated with WFC. [Allen, et al. 2012](#) finds that the dispositional variable neuroticism is associated with increased risk of WFC; two dispositional factors, positive affect and self-efficacy, are linked to decreased WFC risk. A construct that complements WFC is work-family enhancement (WFE), although not as much research has been conducted on WFE. A comprehensive model of work-family balance developed in [Greenhaus and Allen 2011](#) encompasses both WFC and WFE.

- **Allen, T. D., R. C. Johnson, K. N. Saboe, E. Cho, S. Dumani, and S. Evans. 2012. Dispositional variables and work-family conflict: A meta-analysis. *Journal of Vocational Behavior* 80:17–26.**

DOI: [10.1016/j.jvb.2011.04.004](#)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

Findings from this meta-analysis indicate that the dispositions agreeableness and conscientiousness are related to reduced work interference with family (WIF) and family interference with work (FIW). Neuroticism is associated with greater WIF and FIW.

Find this resource:

- **Byron, K. 2005. A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behavior* 67:169–198.**

DOI: [10.1016/j.jvb.2004.08.009](#)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

A set of findings in this meta-analysis suggests that, compared to family factors, work factors (e.g., number of hours on the job) are more strongly related to WIF. By the same token, compared to work factors, family factors (e.g., family stress) are more strongly related to FIW. Schedule flexibility is associated with lower levels of WIF and FIW.

Find this resource:

- **Greenhaus, J. H., and T. D. Allen. 2011. Work-family balance: A review and extension of the literature. In *Handbook of occupational health psychology*. Edited by J. C. Quick and L. E. Tetrick, 165–183. Washington, DC: American Psychological Association.**

[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

This chapter reviews considerable quantitative and qualitative research on work-family balance. It enumerates a number of alternate ways of defining work-family balance. The authors synthesize research findings to produce a comprehensive theoretical model of work-family balance. The model integrates WFC and WFE. Components of the model include the extent of the individual's involvement in family and work roles, role characteristics, and the individual's effectiveness in and satisfaction with each role.

Find this resource:

- **Michel, J. S., L. M. Kotrba, J. K. Mitchelson, M. A. Clark, and B. B. Baltes. 2011. Antecedents of work-family conflict: A meta-analytic review. *Journal of Organizational Behavior* 32:689–725.**

DOI: [10.1002/job.695](#)[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

This meta-analytic review identifies a number of family and work stressors that are associated with WFC. Job stressors associated with higher levels of WFC include role conflict at work, work role overload, and work time demands. Work factors associated with lower levels of WFC include organizational, supervisor, and coworker support. Family stressors (e.g., within-family role conflict and parental time demands) are also associated with WFC. Spousal support is related to lower conflict. From a dispositional standpoint, neuroticism is related to more WFC conflict, and an internal locus of control is linked to less.

Find this resource:

Interventions

Research on health-related workplace interventions is marked by inconsistencies from study to study ([Brisson, et al. 2016](#); [Semmer 2011](#)). [Israel, et al. 1996](#) shows that the implementation of a health-related workplace intervention involves myriad decisions including selecting the object of change (e.g., the individual, the organization), identifying the strategy to use (e.g., job redesign, stress management training), and selecting outcomes of interest (e.g., blood pressure, psychological symptoms). [Tetrick and Quick 2011](#) describes two approaches to intervening in the workplace to protect workers' health and safety and enhance their well-being. One approach, labeled Practices for Achieving Total Health (PATH), recognizes five areas (work-life balance, employee growth, health/safety, recognition,

worker involvement) in which resources can be invested. The second approach is a public health model, which is layered to include interventions that reflect primary prevention (aimed at all employees, including those not currently at risk), secondary prevention (aimed at workers currently at risk), and tertiary prevention (aimed at employees who have already suffered a health decrement). Evidence in [Montano, et al. 2014a](#) suggests that comprehensive interventions at the level of the work organization have relatively more success than interventions aimed at changing specific worker behaviors. Research on workplace interventions with a very specific focus (e.g., increasing workers' fruit and vegetable consumption), however, reveals small, but nonetheless significant, beneficial effects ([Montano, et al. 2014b](#)). Evidence from the meta-analysis in [Richardson and Rothstein 2008](#) indicates that stress management interventions can help reduce symptoms of psychological stress in employees. A broader evidence base outlined in [Joyce, et al. 2016](#) suggests that primary prevention strategies involving increasing worker control help reduce the risk of psychological symptoms; the secondary/tertiary prevention strategy of cognitive behavior therapy (CBT) helps reduce psychological symptoms. However, few organizational interventions aimed at improving cardiovascular (CV) health have been mounted ([Schnall, et al. 2017](#)). A review in [Anger, et al. 2015](#) suggests that the development of the approach known as Total Worker Health™ (TWH) shows promise in improving the health and well-being of workers. [Karanika-Murray and Biron 2015](#) underlines the importance of learning from interventions that fail in order to design interventions that are more likely to succeed.

- **Anger, W. K., D. L. Elliot, T. Bodner, et al. 2015. Effectiveness of Total Worker Health interventions. *Journal of Occupational Health Psychology* 20:226–247.**

DOI: [10.1037/a0038340](#)Save Citation »Export Citation »E-mail Citation »

TWH involves a coordinated, two-pronged approach to worker health and safety. One avenue of the approach involves intervening in the work environment and/or at the organizational level. The other avenue of approach involves health promotion at the level of the individual worker. This review of seventeen studies that employ TWH or TWH-like interventions suggests that TWH-type interventions can improve worker health and safety.

Find this resource:

- **Brisson, C., M. Gilbert-Ouimet, C. Duchaine, X. Trudel, and M. Vézina. 2016. Workplace interventions aiming to improve psychosocial work factors and related health. In *Work stress and health in a globalized economy*. Edited by J. Siegrist and M. Wahrendorf, 333–363. Cham, Switzerland: Springer International. .**

DOI: [10.1007/978-3-319-32937-6](#)Save Citation »Export Citation »E-mail Citation »

Based on past reviews, the authors observe inconsistent findings, although the trend favors workplace interventions aiding health. The authors stress the importance of getting a “strong commitment” from line managers, buy-in from workers, and careful risk assessment during the development phase of an intervention and the documentation of how the intervention was conducted (including stumbling blocks and ad hoc changes) during the implementation phase.

Find this resource:

- **Israel, B. A., E. A. Baker, L. M. Goldenhar, and C. A. Heaney. 1996. Occupational stress, safety, and health: Conceptual framework and principles for effective prevention interventions. *Journal of Occupational Health Psychology* 1:261–286.**

DOI: [10.1037/1076-8998.1.3.261](#)Save Citation »Export Citation »E-mail Citation »

The authors' conceptual model for preventative workplace interventions involves a number of practice-related principles. These principles include structuring an intervention to be context specific, targeting not one but a “complex set of factors” (e.g., interpersonal, organizational, etc.; psychosocial and physical conditions; potentially stress-mitigating conditions such as social support; multiple outcomes), and involving participants in planning, implementation, and evaluation.

Find this resource:

- **Joyce, S., M. Modini, H. Christensen, et al. 2016. Workplace interventions for common mental disorders: A systematic meta-review. *Psychological Medicine* 46:683–697.**

DOI: [10.1017/S0033291715002408](#)Save Citation »Export Citation »E-mail Citation »

This meta-review provides moderate evidence that increasing employee control and providing opportunities for physical exercise benefit workers in terms of reducing psychological symptoms. There is strong evidence that CBT reduces symptoms of depression and anxiety and improves organizational outcomes. There is strong evidence *against* debriefing after traumatic effects.

Find this resource:

- **Karanika-Murray, M., and C. Biron, eds. 2015. *Derailed organizational interventions for stress and well-being: Confessions of failure and solutions for success*. Dordrecht, The Netherlands: Springer.**

Save Citation »Export Citation »E-mail Citation »

The authors underline the idea that interventions can fail for a number of reasons, including implementation errors, organizational stakeholders being or becoming unenthusiastic about the project, etc. Future researchers can learn from the experience of other investigators whose interventions derail. The book includes case studies of failed interventions and the reasons for their failure.

Find this resource:

- **Montano, D., H. Hoven, and J. Siegrist. 2014a. Effects of organisational-level interventions at work on employees' health: A systematic review. *BMC Public Health* 14:135.**

DOI: 10.1186/1471-2458-14-135[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

This review of the research identifies thirty-nine studies that evaluate the impact of workplace interventions on diverse health-related outcomes (e.g., burnout, injuries). Most of the interventions are quasi-experimental. The review shows that interventions aiming for comprehensive organizational and environment changes are more likely to succeed. The authors also consider why some interventions fail.

Find this resource:

- **Montano, D., H. Hoven, and J. Siegrist. 2014b. A meta-analysis of health effects of randomized controlled worksite interventions: Does social stratification matter? *Scandinavian Journal of Work, Environment, & Health* 40:230–234.**

DOI: 10.5271/sjweh.3412[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

This meta-analysis, limited to randomized controlled trials, shows modest but beneficial intervention effects on specific health-related behaviors. The outcomes of the interventions include weight loss and fewer musculoskeletal symptoms.

Find this resource:

- **Richardson, K. M., and H. R. Rothstein. 2008. Effects of occupational stress management intervention programs: A meta-analysis. *Journal of Occupational Health Psychology* 13:69–93.**

DOI: 10.1037/1076-8998.13.1.69[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

This meta-analysis indicates that stress management interventions can have a beneficial effect on psychological symptoms (e.g., anxiety, depression). Cognitive behavior interventions appear to be the most successful.

Find this resource:

- **Schnall, P., M. Dobson, and P. Landsbergis. 2017. Work, stress, and cardiovascular disease. In *The handbook of stress and health: A guide to research and practice*. Edited by C. L. Cooper and J. C. Quick, 99–124. Chichester, UK: Wiley-Blackwell.**

[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

The authors review research linking work-related risk factors to CV outcomes. However, research on organizational interventions aimed at reducing job stress as a means to improving CV health has been sparse.

Find this resource:

- **Semmer, N. 2011. Job stress interventions and organization of work. In *Handbook of occupational health psychology*. 2d ed. Edited by J. C. Quick and L. E. Tetrick, 299–318. Washington, DC: American Psychological Association.**

[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

Semmer observes that interventions aimed at alleviating organizational stress are sometimes successful “for some people, and on some measures” (p. 307). He also notes that perceptual measures (e.g., perceived autonomy) in intervention research aimed at enhancing psychosocial working conditions (e.g., autonomy) can serve as a manipulation check.

Find this resource:

- **Tetrick, L. E., and J. C. Quick. 2011. Overview of occupational health psychology: Public health in occupational settings. In *Handbook of occupational health psychology*. 2d ed. Edited by J. C. Quick and L. E. Tetrick, 3–20. Washington, DC: American Psychological Association.**

[Save Citation »](#)[Export Citation »](#)[E-mail Citation »](#)

The authors describe the PATH model and the public health prevention model. The authors integrate the two models. An example of the integrated model would be a focus on primary prevention regarding work-life balance (e.g., permitting flextime and personal days off) or secondary prevention to protect health and safety (e.g., providing safety ideas to employees working in hazardous situations).

Find this resource: