Workplace Stress and Health: Organizing Work to Optimize Health

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BJC Employee Wellness Summit 2015

NOTE: *The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy*.

Overview

- Stress

- Work organization and health

- Total Worker Health™

- Organize work to Optimize Well-being
  - Work redesign
  - Integration among workplace programs
  - Health in all decisions

Health and "Well-Being"

Work-related stress is the
NO. 1 WORKFORCE HEALTH ISSUE
and a major occupational risk, ranking above
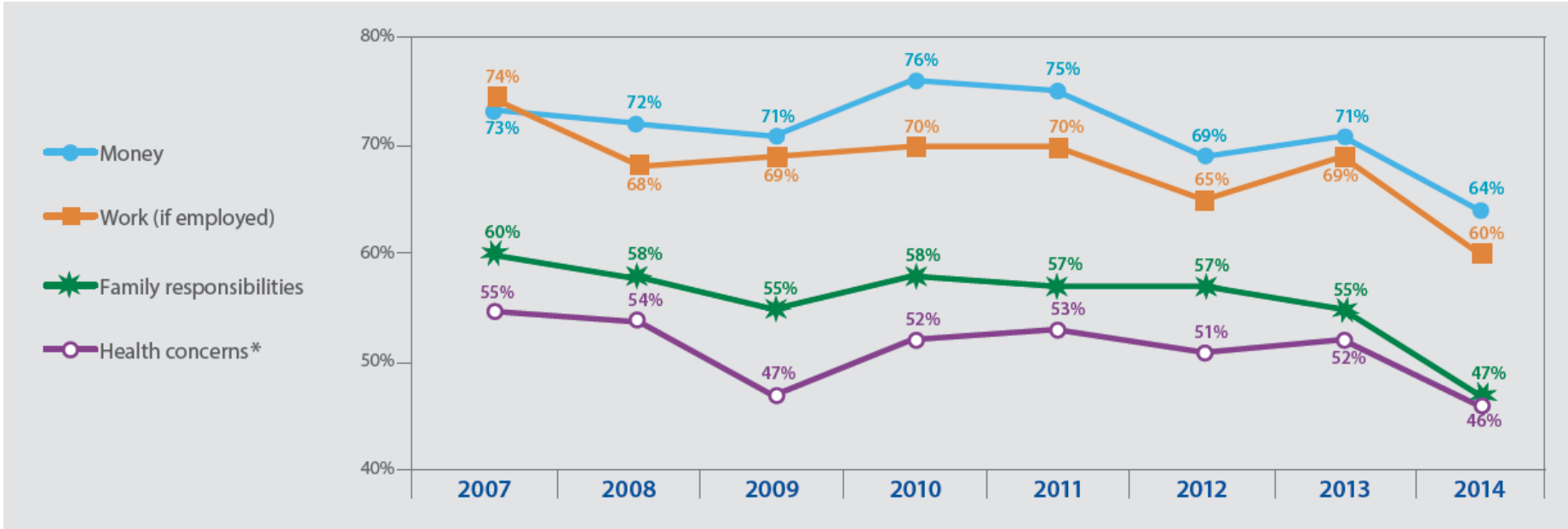physical inactivity and obesity.
Source: 2013 Towers Watson Survey

Source: American Psychological Association (2015). Stress in America™ : Paying with Our Health.

Source: American Psychological Association (2015). Stress in America™ : Paying with Our Health.

Changing World of Work

- Workplaces are rapidly evolving
  - Shift from manufacturing to services
  - Technological changes. New chemicals, materials, process, & equipment is being developed & marketed at an ever-accelerated pace
  - Longer hours, compressed work weeks, shift & temp work, reduced job security
- Downsizing, corporate restructuring
- Change in employment contract (contingent / temporary workers)
- Labor shortages

Work Trends

- Need for more self-organization of work

- Escalating need for more flexibility

- Demographic changes and other challenges
  - Increasingly diverse
  - Chronologically gifted workers
  - Workers with disabilities
  - Returning veterans

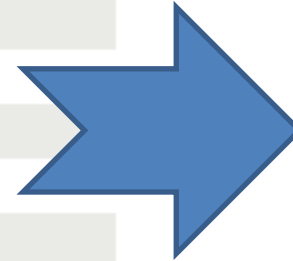- Increasing emphasis on productivity, absenteeism, "presenteeism"

Long Work Hours

Average Hours Worked by Full-Time U.S. Workers, Aged 18+

In a typical week, how many hours do you work?

	Employed full-time
	%
60+ hours	18
50 to 59 hours	21
41 to 49 hours	11
40 hours	42
Less than 40 hours	8

50% Work 41 hours or more

Based on Gallup data from the 2013 and 2014 Work and Education polls, conducted in August of each year
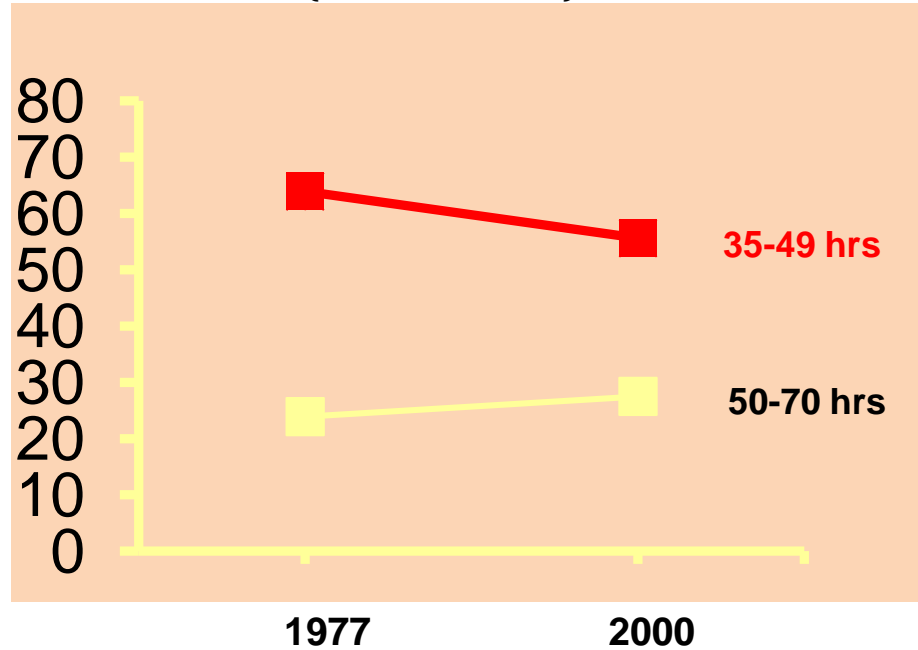
GALLUP®

Source: Gallup.com

Hours Worked per Week

(% of workforce)

Source: Dept. of Labor Quality of Employment Survey; NIOSH Quality of Work Life Survey

Models of Stress

- General Models
  - Transactional Model: Interaction between the person and the environment (Folkman & Lazarus, 1990).
  - Conservation of Resources (Hobfoll, 1989)
- Occupational Stress
  - P-E Fit (Caplan et al., 1975)
  - Job demands-control (Karasek, 1979)
  - Effort-reward imbalance (Siegrest, 2001)
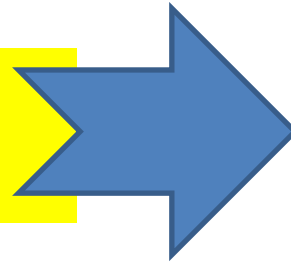
Work ➡ Stress

- What is stress?
  - Stimulus – demands of the work environment (stressor)
  - Response – person's reactions to work demands (strain)
  - Interaction – interaction of the person with the work environment (stress)
- Demands exceed resources
- Results in feeling burned out / used up
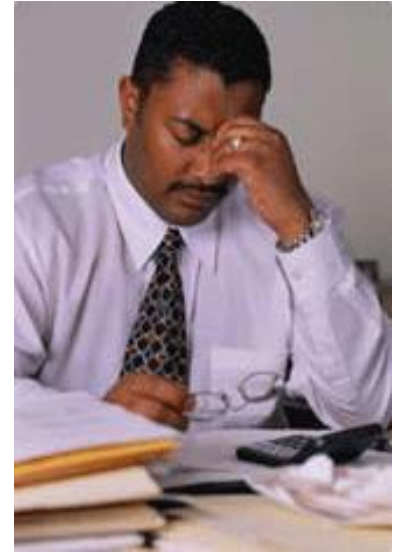
Frequency of Stress at Work

"Do you find your work stressful?"

Never………………… 7%

Hardly ever………… 16%

Sometimes………… 42%

Often………………… 22%

Always……………… 13%

35% Often to Always find Work Stressful

Source: General Social Survey, NIOSH Quality of Worklife Survey (2006)

AMERICAN PSYCHOLOGICAL ASSOCIATION
Stress in America
Mind/Body Health: For a Healthy Mind and Body, Talk to a Psychologist

Significant Sources of Stress, by Gender
(% Somewhat/Very Significant)

Money — 75% / 67%

Work — 68% / 70% ← Men

The economy — 66% / 59%

Family responsibilities — 60% / 50%

Source: APA, 2009

Threats Facing American Workers
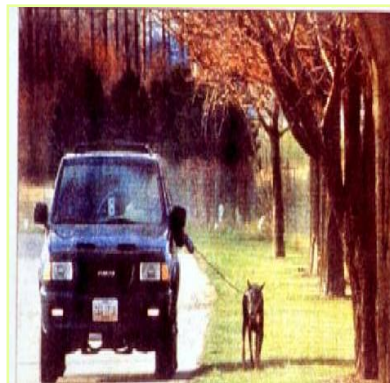
Model of Work Organization and Worker Safety and Health

WORKER DEMOGRAPHICS

Labor Supply
Technology
Economy

WORK ORGANIZATION
Org Practices
Job Design

Physical and Chemical Exposure

MECHANISMS

Biological
Behavioral
Cognitive
Etc.

OUTCOMES

Illness
Stress
Injury
Dysfunction
Disease
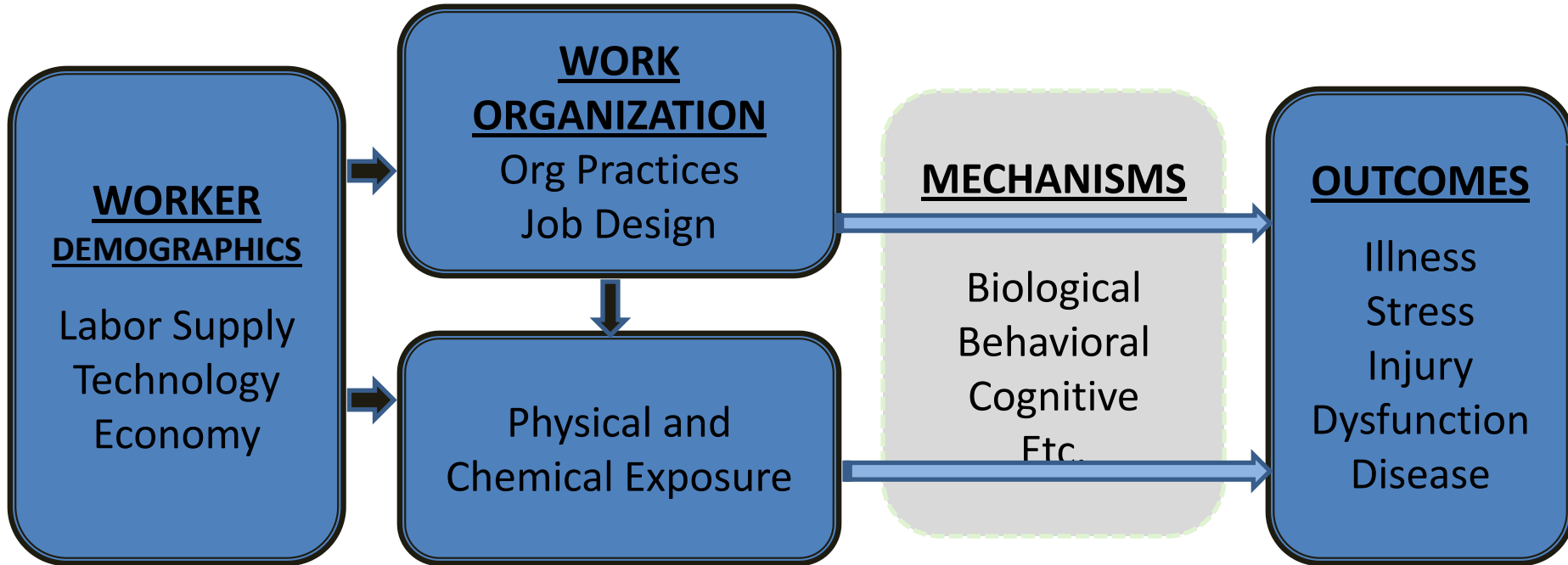
Sources of Stress: Job and Task Level

- Role stressors
  - Role conflict - demands conflict
  - Role ambiguity - demands are unclear / unknown
- Work overload – too much to do, too little time
- Job Insecurity – job future uncertain
- Monotony – not challenging
- Lack of support
- Shift work / long hours of work

Sources of Stress: Organizational and Interpersonal

- Work-life conflict – work and family / life demands conflict
- Sexual harassment
- Discrimination
- Psychological aggression
- Violence
- Environmental stressors
  - Extreme noise and temperature
  - Cramping / crowding

Workers Report...

- 35-40% of employees report their job is "very or extremely" or "often to always" stressful

- 40% experience distress due to the pressure & mental fatigue

- 54% "often to always" leave work in a state of fatigue

- 50% come to work fatigued[2]

SOURCES: [1]General Social Survey (2006)

[2] *Creating Healthy Corporate Cultures for Both Genders* (2005) www.lluminari.com
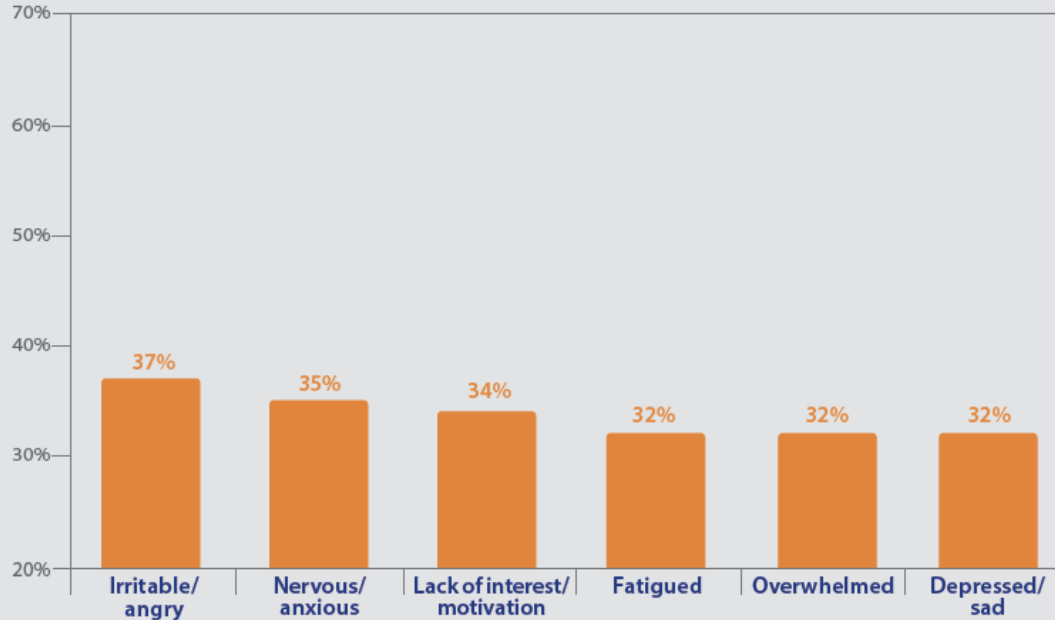
Workers report...

- 20% say that work interferes with family time and home responsibilities
- 50% do not take allotted vacation time
- 3 out of 4 employees actively or passively searching for a new job

Sources: St. Paul Fire and Marine Insurance Company, 1995; NIOSH QWL; SHRM

SYMPTOMS OF STRESS

BASE: ALL QUALIFIED RESPONDENTS 2014 (n=3068)

Q810 Which of the following, if any, have you experienced in the last month as a result of stress? Please select all that apply.

Q7170 Which of the following, if any, have you experienced in the last month as a result of stress? Please select all that apply.

Source: American Psychological Association (2015). Stress in America™ : Paying with Our Health.

Stress affects Physical Health

- Psychological disorders

- Suicide

- Cardiovascular disease

- Cancer, ulcers and impaired immune function

- Workplace injury

- Musculoskeletal disorders

*e.g., Encyclopaedia of Occupational Health and Safety, 1997

Stress affects Mental Health and Lifestyle

- Burnout

- Depression

- Work – life conflict
  - Work – family conflict
  - Eldercare issues

- Health behaviors
  - Smoking
  - Alcohol and substance use

Consequences of Poor Mental Health

- Other symptoms
  - Alcohol abuse
  - Unexplained physical symptoms
  - Chronic fatigue
  - Absenteeism
- Work fewer hours
- Are more likely to end up on disability
- Are less productive than their healthier counterparts

Stress: Work Schedules and Health

- Increase health risks[1]
  - Working 48 or more hours per week in 2010 (about 1 in 5 US workers)
  - Non-standard work arrangements (almost 1 in 5 US workers)
  - Working non-standard shifts (e.g., nights) (about 29% of US workers)
- Women who usually work alternative shifts have increased risk of breast cancer, but less likely to get screened
- Long work hours > hypertension[2]
- Number of hours > increased incidence of acute occupational injury[2]
- Long hours and shift work > poor health, unhealthy behaviors (e.g., smoking)[2]

(Source: 2010 National Health Interview Survey – OHS module[1]; Goh et al., 2015[2])

Stress: Psychosocial Aspects of Work and Health

- More than 16% of US workers have trouble combining work and family responsibilities[1]
- Work-family conflict relates to health problems and substance abuse[2]
- High demands, low control relate to poor mental, physical health and CVD[3]
- About 1 in 3 US workers worries about becoming unemployed[1]
- Almost 8% of US workers have been threatened, bullied, or harassed on the job[1]
- Being threatened, bullied, or harassed at work and job insecurity have been associated with hypertension[1]
- Exposures to workplace stressors are strongly associated with obesity[1]

(Source: 2010 National Health Interview Survey – OHS module[1]; Frone, 2000[2]; Goh et al., 2015[3])

Stress: Physical Exposures and Health

Chemical Exposures Still Surprisingly Common

- About 20% of US workers experience frequent occupational skin contact with chemicals

- 1 in 4 US workers reported chronic exposure to vapors, dust, gas, or fumes on the job

- 1 in 10 non-smoking US workers are exposed to secondhand smoke at work, increasing their risk for lung cancer.

- Smokers who work long hours, are harassed at work, worry about becoming unemployed, and/or are exposed to skin and respiratory hazards in the workplace (including secondhand smoke) are less likely to quit smoking

(Source: 2010 National Health Interview Survey – OHS module)

Stress, Well-being & Health Behaviors in Retail Workers

- Increased **risky health behaviors** (alcohol use and smoking)
- Increase in **physical health complaints**
- Increase in **depressive symptoms**
- Even when culture is supportive (support work/life balance, safety policies) **if stress levels are high**, employees experience:
  - Higher alcohol use
  - More somatic complaints
  - **More depressive symptoms**

Source: Nigam et al., 2005

OPEN ACCESS

ORIGINAL ARTICLE

Contribution of health status and prevalent chronic disease to individual risk for workplace injury in the manufacturing environment

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ABSTRACT
Objectives An 'information gap' has been identified regarding the effects of chronic disease on occupational injury risk. We investigated the association of ischaemic heart disease, hypertension, diabetes, depression and asthma with acute occupational injury in a cohort of manufacturing workers from 1 January 1997 through 31 December 2007.
Methods We used administrative data on real-time injury, medical claims, workplace characteristics and demographics to examine this association. We employed a piecewise exponential model within an Andersen–Gill framework with a frailty term at the employee level to account for inclusion of multiple injuries for each employee, random effects at the employee level due to correlation among jobs held by an employee, and experience on the job as a covariate.
Results One-third of employees had at least one of the diseases during the study period. After adjusting for potential confounders, presence of these diseases was associated with increased hazard of injury: heart disease (HR 1.23, 95% CI 1.11 to 1.36), diabetes (HR 1.17, 95% CI 1.08 to 1.27), depression (HR 1.25, 95% CI

What this paper adds

- Despite an aging population, there is scant literature on the effects of chronic disease on occupational injury risk.
- Some studies have shown higher risk of injury for those with depression, obesity, diabetes and asthma.
- We investigated the association of ischaemic heart disease, hypertension, diabetes, depression, asthma and acute occupational injury in a cohort of manufacturing workers for a 10-year period between 1997 and 2007.
- After adjusting for potential confounders, presence of these diseases was significantly associated with increased hazard of injury: heart disease (HR 1.23), diabetes (HR 1.17), depression (HR 1.25) and asthma (HR 1.14).
- Our results suggest that chronic heart disease, diabetes and depression confer an increased risk for acute occupational injury. Employees may benefit from strategies to reduce chronic

Kubo J, et al., Occup Environ Med 2014; 71:159-166.

Stress and Mental Health Costs

- U.S. industry incurs $300 billion annually in absenteeism, diminished productivity, employee turnover, direct medical, legal and insurance fees [1]

- Depression costs $44 billion annually through it's effects on absenteeism, job performance and other work behaviors [2]

- Including healthcare & other indirect costs[3]

  - Depression = $83.1 billion
  - Anxiety disorders = $63.1 billion
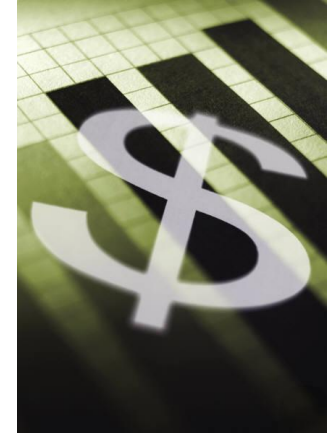
Sources: [1] American Institute of Stress, 2005; [2]Kessler et. al (1999); [3] Langlieb (2005)

Stress and Health costs cont.

- Health care expenditures - nearly 50% greater for workers who report high levels of stress [1]

- Health care costs (1998)[2]
  - Depressed employees = $3,189
  - Non-mental health illnesses = $1,679

- Double whammy: Depressed employees under high stress, costs are 147% higher[2]
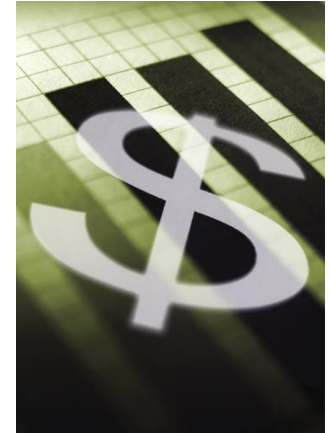
Sources: [1]Goetzel, 1998; [2] Langlieb (2005)

Risks for Fatigue

- Irregular work hours
- Long work hours

- Lack of time to exercise, or eat right
- Away from home

Long Work Hours / Worker Fatigue Affects EVERYONE

- Poorer general health, more illness
- Increased injury
- Employer - Reduced productivity
- Family – delayed marriage, childbirth
- Community (e.g., motor vehicle accidents)

Obesity

- Prevalence[1]: 68.3% over age 20 overweight or obese
- Positive association between low education, unemployment, low occupational status, and BMI in men and women
- Work concerns around obesity
  - 27% of workers have sedentary jobs
  - Adults spend 1/4 of their lives at work
  - Pressures of work may be a risk factor for obesity (long hours, high demands, low control)
  - Obesity is a risk factor for occupational injury and illness

[1]Source: Flegal, KM, Carroll, MD, Ogden, CL, Curtin, LR (2010)
JAMA. 303(3):235-241.

Recap: Physical Health Consequences associated with Work Design

- Injury
  - Musculoskeletal disorders
  - Accidents (slips, trips)
- Fatigue / inactivity
- Chronic health problems
  - Obesity
  - Diabetes
  - Cardiovascular disease

Recap: Organizational Outcomes associated with Work Design

- Lost productivity
  - Absenteeism
  - Presenteeism
- Turnover
- Healthcare costs
  - Employees and their dependents

1 in 5 (20%) AMERICANS SAY THEY NEVER ENGAGE IN AN ACTIVITY TO HELP relieve or manage their stress

Source: American Psychological Association (2015). Stress in America™ : Paying with Our Health.

What are Organizations Doing?

Employers' Response to Job Stressors

Stressors	Employers say stressor affects business	Employers taking Strong action
Long hours, heavy demands	48%	5%
Work / life imbalance	32%	16%
Technology that increases availability (cell phones, PDAs)	29%	6%

Source: Watson Wyatt, 2008

Individually-Oriented Interventions

- Stress Management – teach better coping skills

- Employee Assistance Programs (EAP) – counsel after health problems occur

- Worksite Health Promotion (WHP) – reduce lifestyle risk factors

Limited Use

◆ Participation is low in flexibility programs, except for telecommuting

	Percent of companies offering	Percent participating in past three years	
		WOMEN	MEN
Telecommuting/ working from home	82%	45%	38%
Reduced schedules	88	12	11
Leaves of absence/sabbaticals	82	7	8
Part-time schedules	85	2	2

◆ Participation is also low in family-oriented programs

	Pct. of companies offering	Pct. of women w/ children under 18 participating	Pct. of men w/ children under 18 participating
Extended maternity leave	65%	4%	NA
Programs to smooth maternity transitions	32	4	NA
Extended paternity leave	44	NA	1%
Subsidized/in-house child care	36	3	2
Peer networking group for parents	49	3	1

Worksite Health Promotion Prevalence and Use

- **WHP Prevalence**
  – 25-60% companies offer some type of wellness program
  – 58% offer "lifestyle improvement" (Watson Wyatt & NBGH, 2009)
- **Low participation**
  – Less than 5% participate in weight management
- WHP has shown positive effects on employee health and health behaviors, however the effects are not sustained over time

Potential Reasons for Limited WHP Participation and Effectiveness

- Potential barriers to employee participation and program sustainability
  - Individual perceptions
  - Organizational constraints
- Limited focus of worksite health promotion on individual risk factors
- Emphasis on behavior change rather than considering the organizational culture and work environment
- Lack of integration with other programs at work

A Systematic Review of the Job-stress
Intervention Evaluation Literature, 1990–2005
ANTHONY D. LAMONTAGNE, SCD,

	Individual Change	Individual + Organizational Change
Positive Health Outcomes *Mental health blood pressure*	85% (short - lived)	**84%**
Positive Organizational Outcomes *Absenteeism turnover Productivity injury*	31%	**97%**

WHAT IS TOTAL WORKER HEALTH®?

Protecting Workers Is the Cornerstone of Total Worker Health®

Photo Credit: Jawad Qasrawi/Hazards Magazine, 22 July 2014

Total Worker Health®

Policies, programs, & practices that integrate **protection** from work-related safety & health hazards with promotion of injury & illness **prevention efforts** to advance **worker well-being**

Integrated Approach

Adapted from: Liberty Mutual, 2010, Webinar, The Wellness-Work Comp Connection.
Goetzel R. Examining the Value of Integrating Occupational Health and Safety and Health Promotion Programs in the Workplace. The NIOSH Total Worker Health™ Program: Seminal Research Papers 2012. DHHS (NIOSH) 2012-146

Comparison of worksite intervention models

	Traditional Health Promotion Programs	Health Protection Programs	Integrated Approaches
Intervention Target	Individual Behaviors	Work Environment	Individual Behaviors and the Work Environment
Assumptions about Responsibility for Worker Health	Individual Worker	Organization	Shared Between Worker and Management
Audience	Workers	Management and Occupational Safety and Health Professionals	Workers, Union, Management
Program Planning	Outside Experts	Managers and Occupational Safety and Health Professionals	Collaboration among Different Committees and Programs

From, Glorian Sorensen, 2010; Steven Sauter & Jeannie Nigam, NIOSH, 2011

Benefits of Integrated Programs

- Address synergistic risks

- Enhance a culture of trust

- Increase participation in worksite health promotion programs

- **Improve effectiveness** of occupational safety and health and health promotion programs.

- Reduces Cost
  - Improvements in employee health will reduce medical care costs AND enhance worker safety, productivity, and organizational competitiveness.
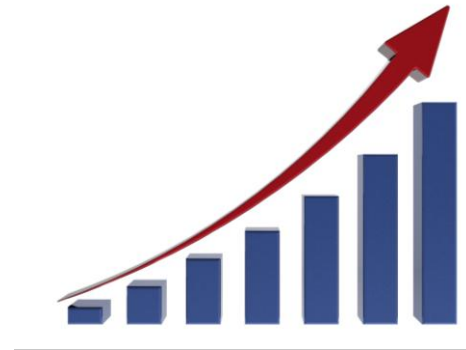 - Reduce sickness absence and improve return on investment.

Continuum of Approaches to Integration
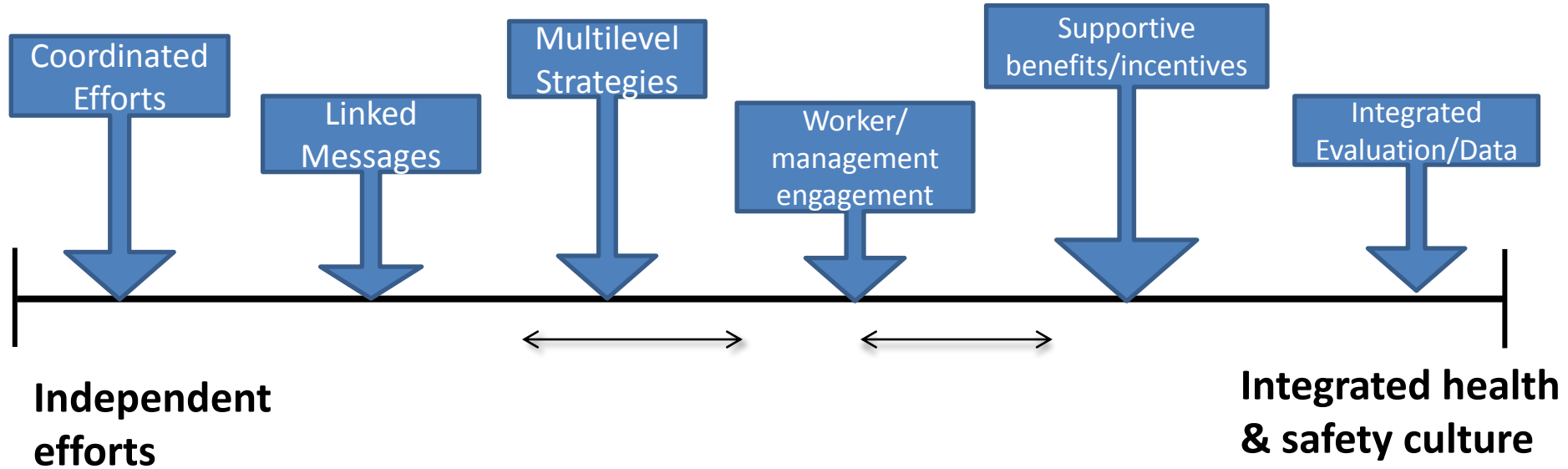
Soresen et al, 2013, JOEM

Imagine . . .

YOU + Work = Well-being

Practical Strategies for Addressing some of the most common Work Organization Stressors

TWH Facets of Work that Support Well-Being

- Worker-centered operations & worker participation in problem solving
- Paid family & sick leave, paid medical benefits
- Equitable wages
- Safe staffing, voluntary overtime
- Discrimination, harassment, and violence prevention
- Health-enhancing work organization and supervision
- Meaningful work
- Work intensification prevention
- Respect, fair performance appraisals & advancement opportunities
- Work-Life integration
- Attention to work factors causing chronic conditions
- Confidential occupational health services
- Support for productive aging across working life

Core Features of Successful Workplace Programs

- Planning process
  – Stress audit
  – Targeted interventions
  – Evaluation of program
- Worker involvement
- Management commitment
- Supportive organizational culture
- Consider health in all decisions

Occupational Safety and Health

Built Environment

Safe Work for All Workers

Disability & Return-to-Work

Policies, Leadership, & Culture

- Manage physical hazards, e.g., noise, slips/trips

- Provide ergonomically-friendly work environments

- Provide aging workforce management skills training for supervisors

- Encourage cross-generational interactions

- Adequate safety training and job design for young workers

- Accommodate medical self-care

- Support return-to-work

CDC Workplace Safety and Health | NIOSH

Address Job Demands

- Prioritize tasks, cut out unnecessary work, try to give warning of urgent or important jobs
- Match individuals to jobs appropriately
- Training. Increase the scope of jobs for those who are over-trained
- Change the way jobs are done:
  - move people between jobs
  - give individuals more responsibility
  - increase the variety of tasks
  - give a group of workers greater responsibility for effective performance of the group
  - MODIFY SCHEDULES as needed to prevent fatigue (e.g.implementing rest breaks)

Human Resources, OD, IH, Engineering

Provide Control and Role Clarity

- Resources

- Empower workers. Enable them to:
  - Plan their own work
  - Make decisions about how that work should be completed
  - Have more control over where, how, and when work is done

- Clarity:
  - Provide clear expectations and instructions
  - Big picture. Clearly defined objectives and responsibilities, link to business objectives, explain how everyone fits in

HR, Training, Managers, OSH

Foster Healthy Interpersonal Relationships

- Provide training in interpersonal skills

- Establish mentoring programs

- Set up effective systems to prevent or reduce bullying, harassment and discrimination (e.g., a policy, grievance procedure and proper investigation of complaints and allegations)

EAP, OSH, HR, Managers, Training & Dev

Healthy Organizational Culture

- Provide opportunities for staff to contribute ideas

- Introduce clear business objectives, good communication and close employee involvement especially in periods of change

- Avoid encouraging people to work excessively long hours

- As a supervisor, set a good example; be approachable

- Do not reward hazardous/counterproductive behavior (i.e., no pizzas for those working late)

HR, EAP, Management, Work / Life, OCC Safety & Health, Health Promotion

Flexible Employment Arrangements

- **Flexible work schedules:** flexible work hours, work from home, reduced schedules
- Flexibility for Work-Life Fit[1] (Balance)
  - Greater Engagement
  - Greater Probability of Retention
  - Greater Job Satisfaction
  - Better Overall Health
- Flexibility to Balance Work & Life Most Effective[2]
  - Retain & Reward the Best People
  - Attract the Best People

[1]2oo8 National Study of the Changing Workforce
[2]SHRM Human Potential Poll, 2010, http://www.shrm.org/Research/SurveyFindings/Articles/Pages/Challengesinnext10Yrs.aspx
Graphic Credit: Veterans Today, http://www.veteranstoday.com/2011/01/12/walking-the-talk-creating-a-culture-of-flexibility/

Manage Organizational Change Carefully

- Ensure good communication with staff

- Provide effective support for staff throughout the process

- Introduce new management / employees to staff in a relaxed environment

Employee workgroups, Managers, EAP, Occ Health OSH

Provide Support to Workers

- Support and encourage staff even when things go wrong

- **Encourage a healthy work-life balance**

- Take into account that everyone is different, and try to allocate work so that everyone is working in the way that helps them work best

- Supervisors: Be a Role Model!!
  - Share your experiences
  - Prioritize your life outside of work
  - Referrals to work-life programs
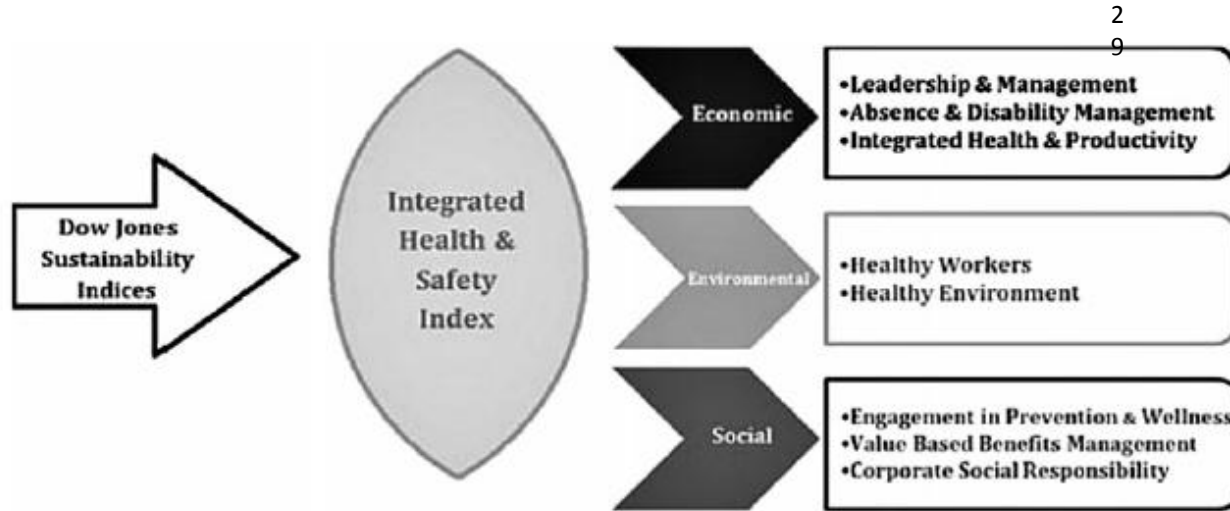
Loeppke RR, et. al. Integrating Health and Safety in the Workplace: How Closely Aligning Health and Safety Strategies Can Yield Measurable Benefits. May 2015, JOEM 57(5), 585-597.

Visit The TWH™ Website:

http://www.cdc.gov/niosh/TWH/

Connect with Us!
Email TWH@cdc.gov

Twitter
([@NIOSH_TWH](#))

LinkedIn
([NIOSH Total Worker Health](#))

TWH in Action!
e-Newsletter

SUMMARY: Support Health through Work

- START with a SAFE and HEALTHY workplace

- Policies and supervisors support balance

- Design work optimally and empower workers

- Reward and offer opportunities for development

- Positive Spillover between work and home!

- Consider health in all decisions.

When your work is

energizing, meaningful, and exciting,

you get to be more

energizing, meaningful, and exciting,

in the other parts of your life.

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http://www.cdc.gov/niosh/TWH/