Dean's Lecture Series and the Sunshine Education and Research Center

Interventions to Reduce Work-Life Stress and Improve Health: A Total Worker Health Approach

Leslie B. Hammer, Ph.D.,
Portland State University

January 31, 2014

Director, Occupational Health Psychology
Associate Director, Oregon Healthy Workforce Center (OHWC),
NIOSH TWH[TM] Center of Excellence

Overview of Presentation

❑ Psychosocial Workplace Stressors, Worker Health, and Well-Being

❑ Work-Life Stress as an Occupational Hazard

❑ Total Worker Health and Occupational Health Psychology

❑ Work-Life Stress and Primary Prevention: Interventions and Approaches to Reduce Work-Life Stress

Psychosocial Workplace Stressors, Worker Health, and Well-Being

❑ The U.S. population has high levels of chronic diseases such as hypertension, obesity, diabetes, and hypertension

❑ Psychosocial workplace stressors such as job demands, lack of control and interpersonal conflict are contributors to cardiovascular disease[1], depression,[2] and body mass index.[3]

[1]Landsbergis PA, Schnall PL, Belkic KL, Schwartz JE, Baker D, Pickering TG. Work conditions and masked (hidden) hypertension-- Insights into the global epidemic of hypertension. *Scand J Work Env Hea.* 2008;34(6):41.

[2] Netterstrøm B, Conrad N, Bech P, et al. The relation between work-related psychosocial factors and the development of depression. *Epidemiol Rev*. 2008;30(1):118-132.

[3] Nyberg ST, Heikkilä K, Fransson EI et al. Job strain in relation to body mass index: Pooled analysis of 160,000 adults from 13 cohort studies. *J Internal Med*. 2012;272:65-73.

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE

Psychosocial Workplace Stressors, Worker Health, and Well-Being

❑ Toker et al[1] found that workplace social support, a factor related to reduced job strain, was a protective factor in the development of diabetes

❑ Additional psychosocial workplace stressors found to be associated with obesity include shift work, sedentary work, and job stress[2]

❑ Work-life stress/conflict is a psychosocial stressor associated with many negative health behaviors[3]

[1] Toker S, Shirom A, Melamed S, Armon G. Work characteristics as predictors of diabetes incidence among apparently healthy employees. *J Occup Health Psychol.* 2012;17(3):259.

[2] Pandalai SP, Schulte PA, Miller DB. Conceptual heuristic models of the interrelationships between obesity and the occupational environment. *Scand J Work Environ Health.* 2013;39(3):221-232.

[3] Hammer, L. B., & Sauter, S. L. (2013). Total worker health and work-life stress. *Journal of Environmental and Occupational Medicine, 55(12),* S25-S29.

•

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE

Psychosocial Workplace Stressors, Worker Health, and Well-Being

❑ Psychosocial workplace stressors are related to negative health behaviors through two primary mechanisms: 1) coping and 2) reduced psychological and physical resources

❑ Negative health behaviors that have been linked to chronic diseases--- e.g., low levels of exercise, smoking, excessive alcohol intake, poor sleep, and poor eating

❑ **The workplace has been seen as a critical point of intervention at reducing chronic disease either directly through interventions that target psychosocial workplace stressors, or indirectly through workplace-based health promotion programs aimed at changing health behaviors**

Psychosocial Workplace Stressors, Worker Health, and Well-Being

Psychosocial stressors can be seen as the "causes of the causes"[1] of diseases via health behaviors such as low physical exercise, smoking, and alcohol consumption,[2] and should be seriously considered as targets of interventions

Thus, programs and interventions aimed at reducing psychosocial workplace stressors are expected to lead to improved health behaviors and ultimately improved health

[1] Pronk NP, Kottke TE. Social determinants of health: A call to action for the employer community. *ACSMS Health Fit J.* 2010;14(1):44–47.

[2] Vitaliano PP, Zhang J, Scanlan JM. Is caregiving hazardous to one's physical health? A meta-analysis. *Psychol Bull.* 2003;129(6):946.

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Psychosocial Workplace Stressors, Worker Health, and Well-Being

Work-life Stress/Conflict and Negative Health Behaviors: Correlational Studies (see Hammer & Sauter, 2013 review)

☐ Family Dinner Frequency and Fast Food Consumption (Allen, Shockley, & Poteat , 2008)

☐ Time Spent Sleeping (Barnes, Wagner, & Ghumman, 2012)

☐ Smoking behavior, BMI, Daily Sleep (Berkman, Buxton, Ertel, & Okechukwu, 2010)

☐ Physical Activity (Brown, Brown, Miller, & Hansen , 2001)

☐ Personal Food Choices (Devine, Connors, Sobal, & Bisogni, 2003)

☐ Health Care Utilization (Donaldson, Sussman, Dent, Severson, & Stoddard, 1999)

☐ Cigarette Use and Frequency of Heavy Drinking (Frone, Barnes, & Farrell, 1994)

☐ Tobacco Use, Alcohol Consumption, & Physical Activity (Lallukka, Rahkonen, Lahelma, & Arber, 2010; Moen, Fan, & Kelly, 2013)

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE

Psychosocial Workplace Stressors, Worker Health, and Well-Being

"Stress is the number one workforce risk issue, ranking above physical inactivity and obesity, according to the 2013/2014 Towers Watson Staying@Work Survey"

* WSJ, November 2013

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Work-life Stress/Conflict is an Occupational Hazard

❑ Work-life stress negatively impacts health and safety:

❑ Psychological health (i.e., Frone, 2000; Hammer et al., 2005; Grandey & Cropanzano, 1999; Grzywacz & Bass, 2003; LaMontagne, 2013; Neal & Hammer, 2007; Thomas & Ganster, 1995)

❑ Physical health (e.g., Burke & Greenglass, 1999; Frone et al., 1996; Frone et al., 1997; Grzywacz, 2000; Kinnunen & Mauno, 1998; Netemeyer et al., 1996)

❑ Safety outcomes (e.g., Cullen & Hammer, 2007; Smith & DeJoy, 2012)

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Work-Life Stress as an Occupational Hazard

- Work-Related Causes

  – Hours worked (+)

  – Job Stress (+)

  – Work Family Culture (-)

  – Work Supports (-)

  – Family Supportive Supervisory Behaviors (-)

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE
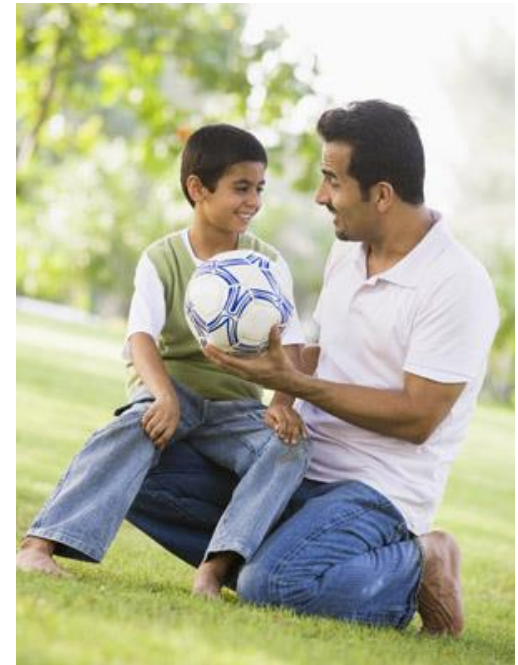
Work-Life Stress as an Occupational Hazard

– Absenteeism (+)

– turnover intentions (+)

– substance abuse (+)

– family, marital, job, and life satisfaction (-)

– organizational commitment (-)

– performance (-)

– Health and well-being (-)

– Safety (-)

Work-Life Stress as an Occupational Hazard

- weighted mean correlation between work-to-family conflict and somatic/physical symptoms of .29. Allen et al. 2000

- Family responsibilities and blood pressure Brisson et al., 1999

- work-life stress and depressive symptoms Hammer et al., 2005

- work-family conflict and sleep-related outcomes Sekine, Chandola, Martikainen, Marmot, & Kagamimori, 2006

- work-life stress and musculoskeletal disorders Hämmig et al., 2011; Kim et al. 2012

- work-life supportive supervisors had employees who reported more sleep and lower CVD risk factor scores Berkman et al., 2010

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

TWH Strategies to Reduce Work-Life Stress

What is "Total Worker Health^{TM}"?

❑ Workplace integration of health protection (organizational level work redesign) and health promotion (wellness programs aimed at behavior change) activities, programs, and interventions

❑ Supported by the Institute of Medicine (IOM, 2005) and the American College of Occupational and Environmental Medicine

❑ National Institute for Occupational Safety and Health (NIOSH)—currently funds 4 Centers of Excellence to Promote a Healthier Workforce (i.e., TWH Centers).

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE

What is "Total Worker Health^{TM}"?

❑ June 2011 NIOSH launched the TWH initiative

❑ The integration of Occupational Safety and Health Protection (including job stress reduction) with Health Promotion and Disease Prevention in the Workplace

❑ The TWH approach is a STRATEGY that involves the practical integration of programs in workplaces to achieve health and well-being of workers. These programs include but are not limited to Safety, Wellness, Workers' Compensation, Employee Assistance Programs, and Health Promotion Programs (Schill & Chosewood, 2013)

❑ This approach/strategy offers organizations increased productivity and offers workers and their families increased health and well-being

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

TWH and OHP: Prevention is key

❑ OSH community should focus on prevention strategies that combine health protection (both stress protection and health & safety protection) with health promotion

❑ Systems approaches to prevention that focus on both individual and occupational risk factors/exposures are expected to be the most efficient in influencing the health and safety of workers

❑ Thus, reduction or elimination of exposures can lead to improved health and safety behaviors and ultimately improved health and safety outcomes

OHWC **OREGON HEALTHY WORKFORCE CENTER**
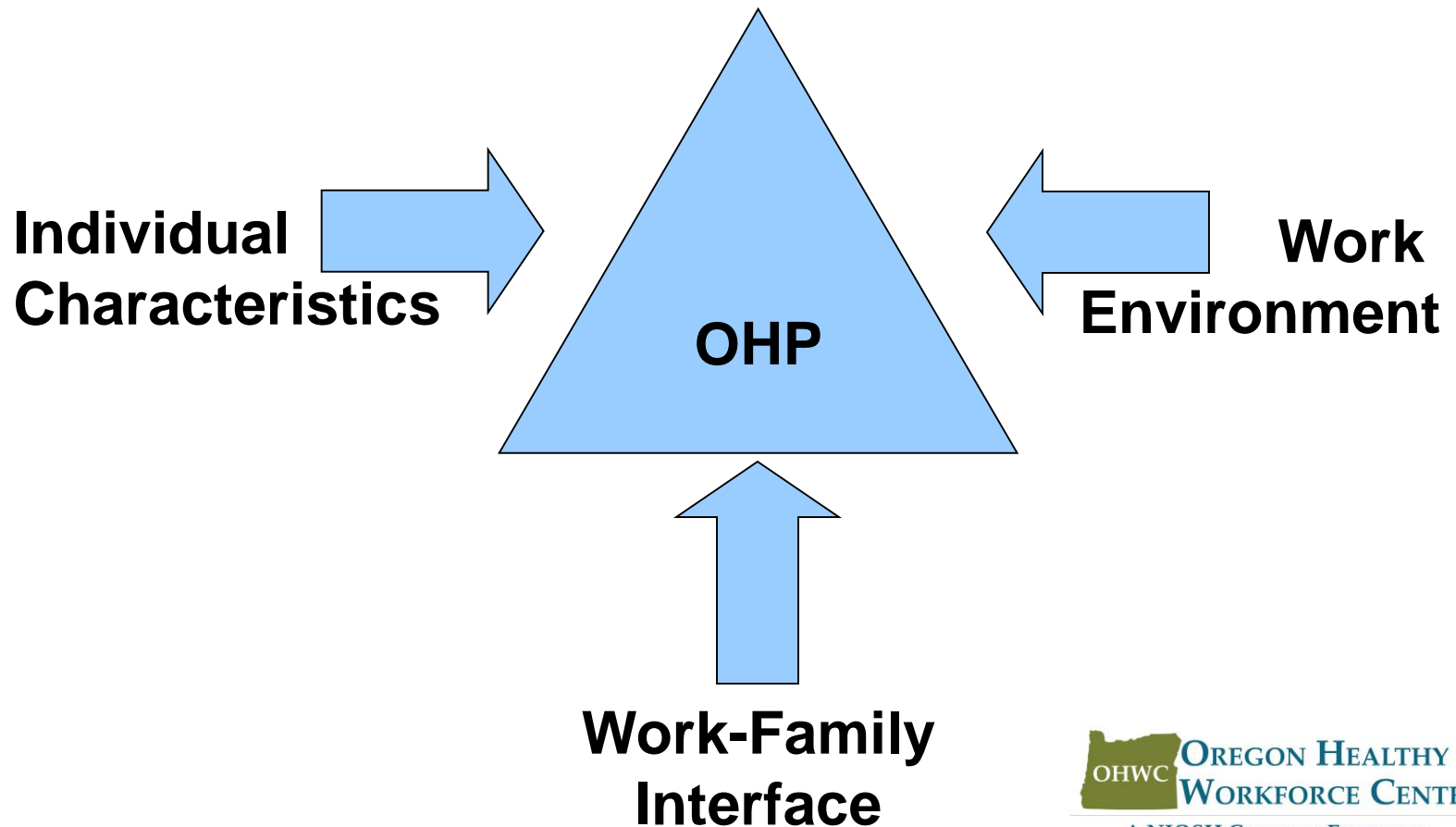A NIOSH CENTER OF EXCELLENCE

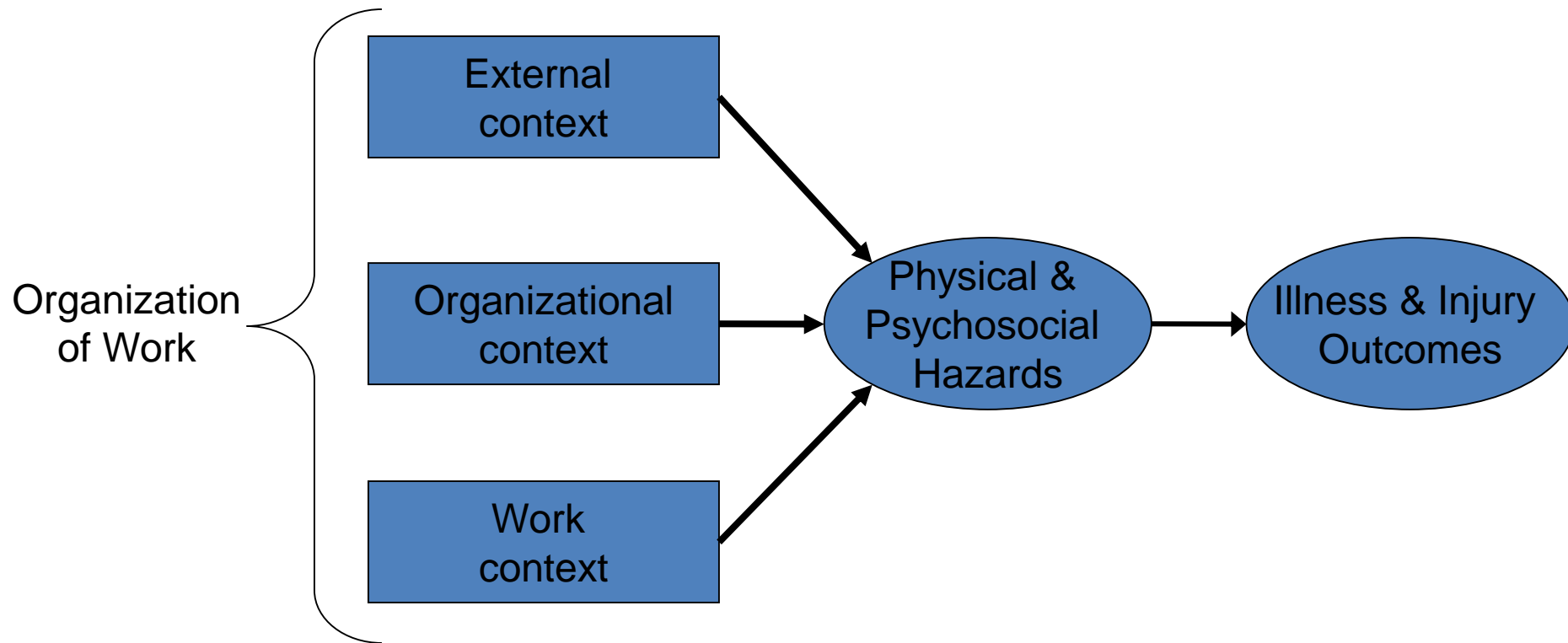# What is Occupational Health Psychology (OHP)?

The application of psychology to improving the quality of work life and to protecting and promoting the safety, health and well-being of workers.

> » Sauter, Hurrell, Fox, Tetrick, & Barling, 1999

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

OHP Focuses on the Individual <u>and</u> the work environment <u>and</u> the work-family interface

The Organization of Work & OHP

Organization of Work
- External context
- Organizational context
- Work context

→ Physical & Psychosocial Hazards → Illness & Injury Outcomes

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Work-Life Stress and Primary Prevention: Interventions and Approaches to Reduce Work-Life Stress

- Limited evidence-based intervention research on work-life stress reduction

- What is available is mostly focused on health protection/stress prevention and thus, there is a need for more integration with health promotion

- Difficulties of conducting intervention research in organizations

What are Workplaces to do?

Reducing job stress through restructuring work

❑ Job stress results from high job demands/psychological and physical demands that require people to work longer, harder, and under extreme working conditions to the point of taxing psychological and/or physical resources and low job control (e.g., Karasek, 1979; Spector & Jex, 1998)

❑ Increasing worker job control/control over how, when, where, the work gets done is significant at improving health and well-being

❑ Increasing social support at work, via supervisor support leads to improved health outcomes

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Work-Life Stress and Primary Prevention

- Increasing control over when and where work is done helps to alleviate such stress (e.g., Kelly & Moen, 2007)

- Providing supervisor support for work and family can improve work-family outcomes for those high in work-family conflict (Hammer et al., 2007; 2009; 2011; Kossek et al., 2011)

Work-life Stress Interventions and Health

❑ The Work, Family and Health Network has been the largest national effort to support organization-level work-life intervention studies that lead to improved health behaviors, and ultimately health of workers

❑ Initial pilot studies are the first to provide evidence of work-life intervention effects on health (i.e., Hammer, Kossek, et al., 2011) and health behaviors (Moen et al., 2013; Moen et al., 2011)

Work, Family, and Health Network Goals

- Conduct interdisciplinary evidence based research in the area of work and family programs and policies.

- Introduce health and well being as the primary outcomes of interest in this area of research.

- Improve the health of workers, their families and employers by providing the scientific evidence necessary to effect change in the workplace.

Work, Family, and Health Network

- Six teams of investigators preparing for the implementation and evaluation of a work-family intervention in workplaces.

- Interdisciplinary across social, behavioral, and health sciences.

- Phase I: 2005-2008.

- Phase II: 2009-2014.

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Financial Sponsors

- National Institute on Aging
- National Institute of Child Health and Human Development
- National Institute of Occupational Safety and Health
- Office of Behavioral and Social Science Research
- W.T. Grant Foundation
- NIHBL

Six Research Teams

- Harvard University
- Kaiser Permanente Center for Health Research
- Pennsylvania State University
- Portland State / Michigan State Universities
- Research Triangle Institute / University of Southern California
- University of Minnesota

Interdisciplinary

- Social epidemiology, biobehavioral health, occupational health psychology
- Organizational behavior, economics
- Developmental psychology, sociology
- Demography
- Survey Design

Work, Family and Health Network Logic Model
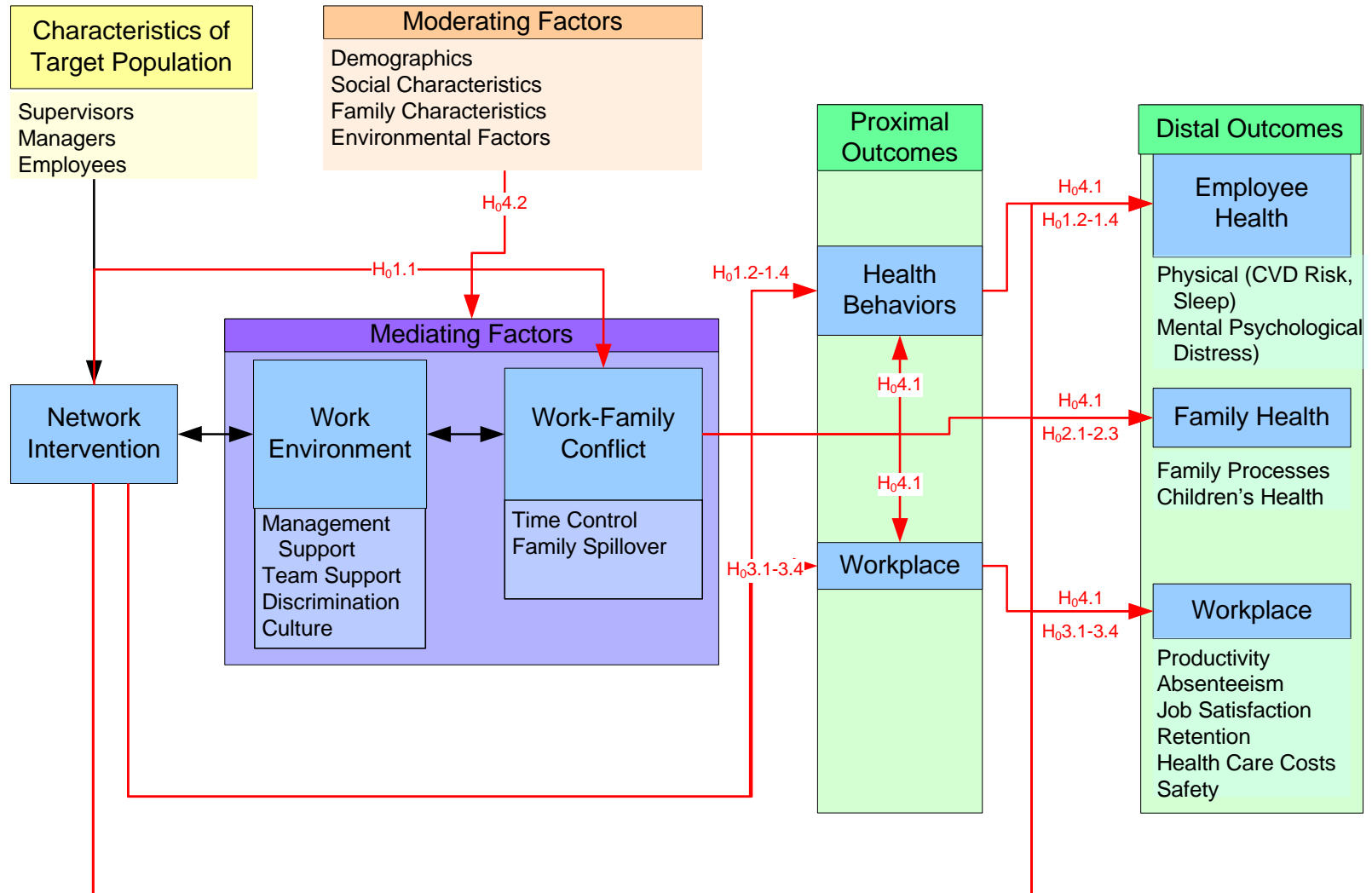
Work-life Stress/Conflict Interventions: WFHN Phase I Study

- Hammer, Kossek, and colleagues (2011) family supportive supervisory training (FSST) and self-monitoring and led to improve supervisor support for work and family and **beneficial effects on worker job satisfaction, turnover intentions, and self-reported physical health symptoms.**

- Funded by the NIH and the CDC
- http://projects.iq.harvard.edu/wfhn

Why do we need supervisor support for family and personal life?

- Supervisor support ->
  - less work-family conflict
  - greater perceived role performance
  - less absence
- Supervisors are linking pins
- If employees see their supervisor as work life supportive they also perceived their organization as more work life supportive*
- New research also demonstrates that availability and formal work-life programs leads to positive outcomes in part *because* it signals support

*Kossek, Picher, Bodner, Hammer, 2011, Personnel Psychology

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Work-life Stress/Conflict Interventions: WFHN Phase II Study

- Increasing supervisors' support for employees' lives outside of work FSSB (Family Supportive Supervisor Behaviors)

- Increasing employees' perceived control over work time

- In order to:

  - Reduce work-family conflicts & enhance positive work-family interactions (spillover)

  - Improve employee & family health and well-being

  - Improve organizational effectiveness through improved recruitment, retention, performance, engagement & fewer absenteeism, accidents

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Overview of the STAR Initiative

- **S**upportive **T**ransformations to **A**chieve **R**esults
- Combines strategies & materials from Phase I:
  - ROWE (Results Only Work Environment)
  - Supervisor training on supportive behaviors
  - Supervisor self monitoring of supportive behaviors
- Pilot studies showed both programs effective and complementary.
- Customized for both industries

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Summary of STAR Activities

- 4 hours for employee sessions
- 9 hours of supervisor activities including participating in employee sessions
- Spread out over 4 months

Data Collection Participants

- Employees

- Worksite Managers

- Employees' spouses/partners (telephone survey)

- Employees' children (household survey)

MEASURES: HEALTH OUTCOMES

- Blood pressure and heart rate
- Height and weight
- Biomarkers of disease
- Sleep duration and quality from actigraphy
- Self-reported health (from the survey)
- Daily Diary Measures and Cortisol

Measures

ORGANIZATIONAL WORK SITE:

productivity, turnover, organizational commitment, safety, costs

WORK TEAM

performance, safety climate, safety behaviors, work-family climate, costs

MANAGER:

performance, attitudes, supervisor behaviors, psychological and physical health

EMPLOYEE:

performance, attitudes, behaviors, perceptions (e.g., job strain and work family conflict), physical and psychological health

FAMILY: parenting, parent stressors, satisfaction, conflict, support, strain, plans and expectations

SPOUSE/PARTNER: attitudes, perceptions (e.g., job strain and satisfaction), behaviors, physical and psychological health

CHILD (dependent): attitudes, perceptions, behaviors, well-being, physical and psychological health

38
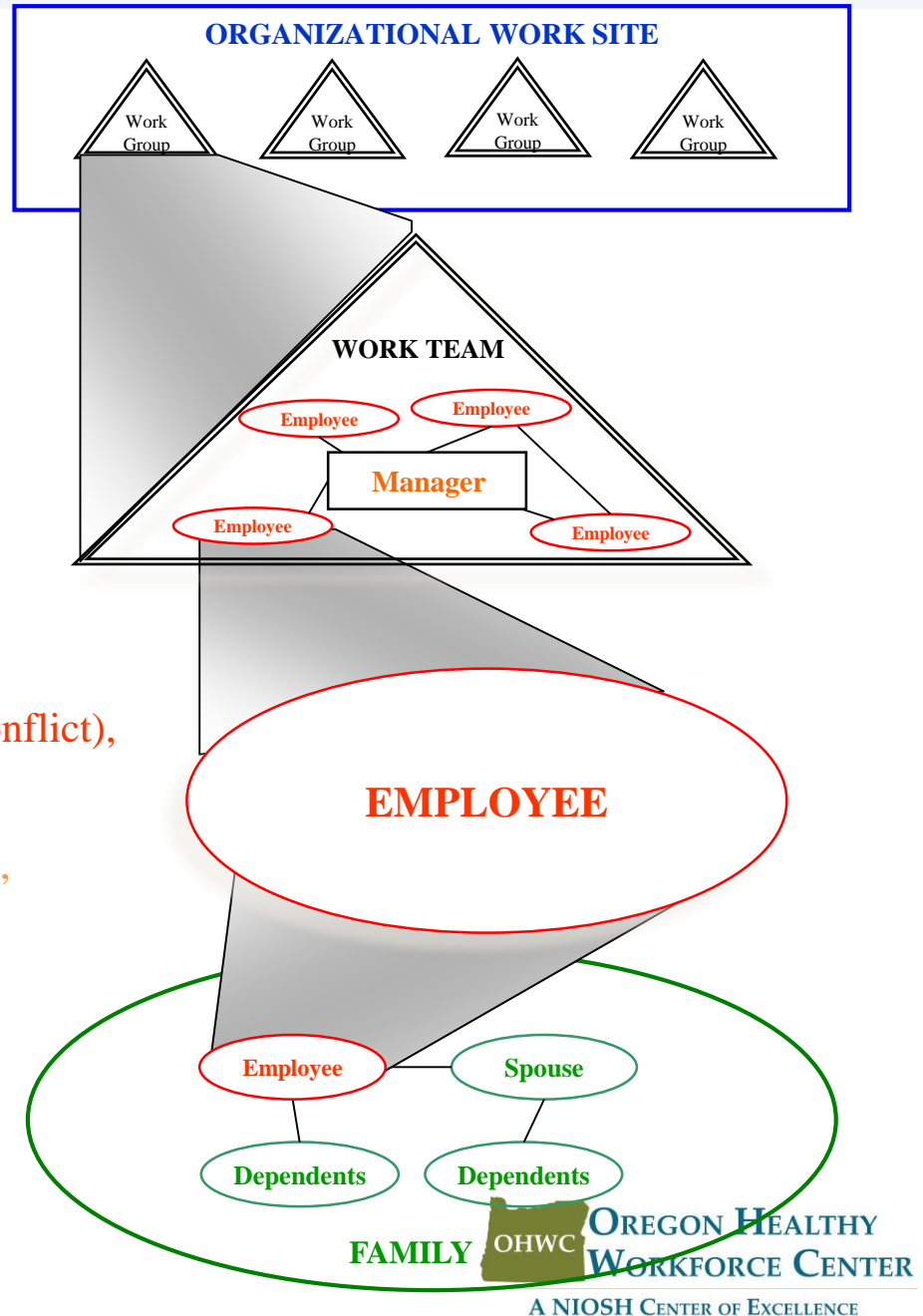
SHIP

Safety & Health Improvement Program

Team-Based Work-Life and Safety Intervention for Construction Workers
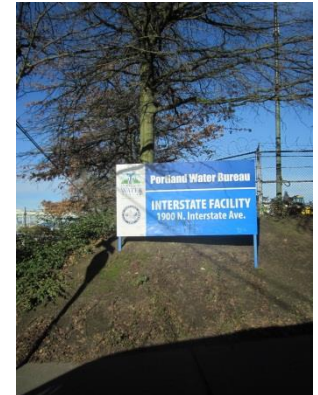
Leslie Hammer, Ph.D (PI)
Donald Truxillo, Ph.D (Co-PI)
Todd Bodner, Ph.D. (Investigator)

OHWC/Portland State University

SHIP: Team-Based Work-Life and Safety Intervention for Construction Workers

- **GOAL:**
  - Test the effectiveness of an integrated intervention that includes Family Supportive Supervisor Training and Team Effectiveness Training (TEP)
  - **Increase work-life support and support for improving safety** among construction workers

SHIP Intervention Components

- Work-life and Safety Supportive Supervisor Training
  - cTRAIN: Online training (1 hour)
- Supervisor Behavior Tracking
  - HabiTrak: (2 weeks)
- WFD –Team Effectiveness Process
  - TEP: Team as a whole (4.5 hrs.)

TEP Overview

Complete *TEP Assessment Tool*
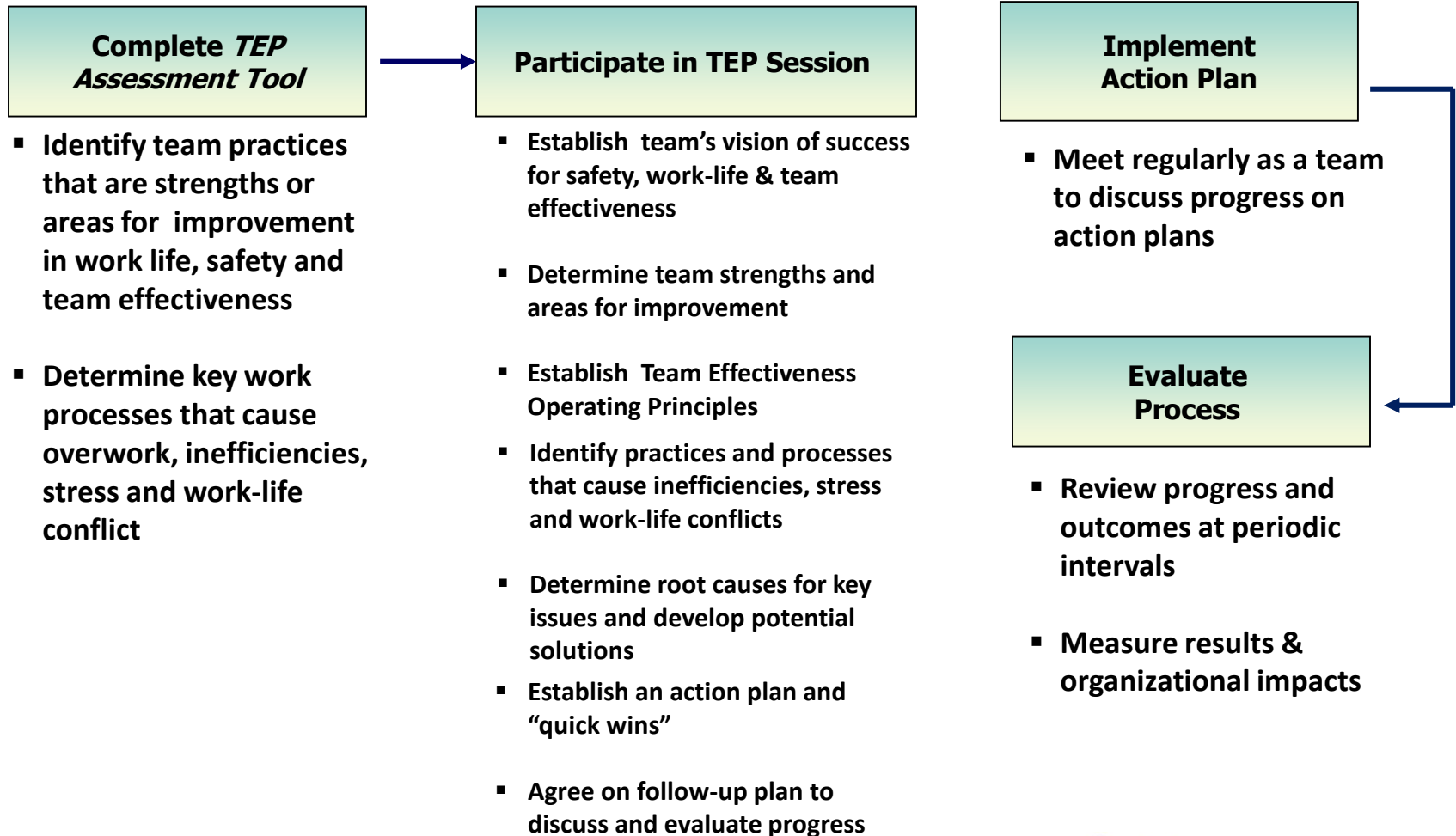
- **Identify team practices that are strengths or areas for improvement in work life, safety and team effectiveness**

- **Determine key work processes that cause overwork, inefficiencies, stress and work-life conflict**

Participate in TEP Session

- **Establish team's vision of success for safety, work-life & team effectiveness**

- **Determine team strengths and areas for improvement**

- **Establish Team Effectiveness Operating Principles**
- **Identify practices and processes that cause inefficiencies, stress and work-life conflicts**

- **Determine root causes for key issues and develop potential solutions**
- **Establish an action plan and "quick wins"**

- **Agree on follow-up plan to discuss and evaluate progress**

Implement Action Plan

- **Meet regularly as a team to discuss progress on action plans**

Evaluate Process

- **Review progress and outcomes at periodic intervals**

- **Measure results & organizational impacts**

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE

Data Collection

Total Possible Population: 528

- Baseline
  - 347 participants (66% Response Rate)
- 6-months
  - 388 participants (73% Response Rate)
  - 251 matches to baseline
- 12-months
  - 336 participants (64% Response Rate)
    - 253 matches to baseline
    - 240 matches to both baseline and 6 months

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Domain	Variable	Mean or %	SD
General Physical Health	SF 12 Health Composite	47.42	6.84
Body Mass & Composition	BMI	31.19	6.24
	Underweight BMI	1%	
	Normal BMI	15%	
	Overweight BMI	30%	
	Obese	54%	
	Fat Mass	30.74	8.95
Blood Circulatory System	Heart Rate (per minute)	71.79	11.36
	Systolic BP	128.23	13.7
	Diastolic BP	79.47	10.83
	Normal BP	24%	
	Pre-hypertensive BP	51%	
	Stage I Hypertension	20%	
	Stage II Hypertension	5%	
	On blood pressure medication	23%	

Baseline BP Results

	Normal	Prehypertension	Stage 1	Stage 2
Total N	79	172	68	17
Percentage	24%	51%	20%	5%

Normal: less than 120/80
Prehypertension: 121-139/81-89
Stage 1 HTN: 140-159/90-99
Stage 2 HTN: >160/100

*73.7% of the population had abnormal results
** Valid N=336, 13 participants declined health assessments

Correlations of Self-Reported Psychosocial Workplace Stressors and Supports with Health, Injury, and Pain/Discomfort Variables

Psychosocial Workplace Stressors and Supports	Health							Injury / Pain		
	PHC	BMI	FMP	HR	SBP	DBP		MWI	PD3	PD7
Work-to-Family Conflict	-.22*	.10	.08	.07	.08	.13*		.19*	.18*	.20*
Family-to-Work Conflict	-.10	.09	.04	.03	.07	.12*		.18*	.12*	.12*
Job Decision Latitude	.14*	-.17*	-.14*	-.14*	-.03	-.09		-.12*	-.09	-.05
Job Demands	-.04	.03	.05	.09	.04	.12*		.12*	.13*	.17*
Perceived Organizational Support	.10	-.10	-.14*	-.13*	-.03	-.10		-.15*	-.17*	-.16*
Team Cohesion	.06	-.07	-.09	-.06	.04	-.02		-.18*	-.20*	-.12*

Projected Project Plan: 2014-2016

2014

- Complete Waitlist Control Training
- Analyze Data
- Publish
- Communicate with Partner's
  - Total Worker Health (TWH) Pilot

2015

- Select 2 teams to pilot health intervention
- Design data collection plan
- Develop survey tools
- Design intervention (based on what we learned during SHIP intervention)

2016

- Administer pre-test
- Conduct intervention with 2 groups
- Administer post-test (6-months)
- Analyze Data
- Prepare report

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Conclusions

This total worker health approach to work-life stress that integrates health promotion interventions and health protection interventions is expected to lead to reduced negative health and safety behaviors and improved health and safety outcomes for workers, families, and organizations, alike.

1st International Symposium to Advance TOTAL WORKER HEALTH™
Natcher Conference Center, Bethesda, MD
October 6-8, 2014 | Call for Abstracts: NOW OPEN!

- http://www.eagleson.org/conferences/total-worker-health

OHP Summer Institute

First Announcement!

**Occupational Health Psychology (OHP) Summer Institute:
Advancing Theory and Practice in the Context of Total Worker Health
JULY 16, 17, 18, 2014**

Day 1: OHP- Scholarly Work Advancing Theory

Mo Wang, University of Florida, National Science Foundation
Day 1 Featured Speaker

Day 2: Intersection of Theory & Practice: TWH

Laura Punnett, University of Massachusetts at Lowell,
Institute Keynote Speaker

Day 3: Practical Interventions in the Workplace

Jeffrey Harris, University of Washington,
Day 3 Featured Speaker

OHWC **OREGON HEALTHY WORKFORCE CENTER**
A NIOSH CENTER OF EXCELLENCE

Contact Information

Leslie B. Hammer, Ph.D., Professor

Dept. of Psychology, Portland State Univ.

hammerl@pdx.edu, 503.725.3971

WFHN web page: www.workfamilyhealthnetwork.org
OHP Departmental web page: http://www.ohp.psy.pdx.edu/
WFHN Project web page www.wfsupport.psy.pdx.edu
ORHWC Project web page: http://www.ohsu.edu/xd/research/centers-institutes/croet
SERVe: www.servestudy.org

OHWC OREGON HEALTHY WORKFORCE CENTER
A NIOSH CENTER OF EXCELLENCE