Issues in Incorporating the Concept of “Well-being” in Risk Assessments, Regulations, and Guidance for Workers

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The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the National Institute for Occupational Safety and Health.
We know the world of work is undergoing major changes.
In the nature of work
Profound Changes in the Occupational World

- **Work**
  - Physical → Mental
  - Production → Service → Health Care
  - New ways of organizing
    - Contracting
    - Downsizing
    - Lean manufacturing
  - Work intensification
In the composition of workforce
Profound Changes in the Occupational World (cont’d)

- Workforce
  - Older workers
  - More immigrants
  - More women
  - More veterans
  - Multigenerational
  - More turnover
  - Less unionization
In the types of workplaces
Profound Changes in the Occupational World (cont’d)

- Workplace
  - More small businesses
  - More telecommuting
  - New work plans
  - New work conditions
While we have new hazards, we must deal with older, deadly ones.

The workplace is a mosaic of hazards.
Cost Burden of Chronic Disease

- Cancer: $37 billion (Direct) + $373 billion (Indirect) = $410 billion
- Heart Disease: $76 billion (Direct) + $137 billion (Indirect) = $213 billion
- Hypertension: $23 billion (Direct) + $172 billion (Indirect) = $195 billion
- Mental Disorders: $28 billion (Direct) + $88 billion (Indirect) = $116 billion
- Diabetes: $17 billion (Direct) + $73 billion (Indirect) = $90 billion
- Pulmonary Conditions: $26 billion (Direct) + $47 billion (Indirect) = $73 billion
- Stroke: $10 billion (Direct) + $14 billion (Indirect) = $24 billion

Total Direct ($217.6 billion) + Total Indirect ($905.1 billion) = $1.1 trillion

DeVol & Bedroussian 2007
Forgone Economic Output Due to Chronic Disease

DeVol & Bedroussian 2007
Transition

Recognizing occupational hazards

Recognizing all factors that affect workers’ health
Broader Consideration of the Role and Impact of Work

- Many of the most prevalent and significant health conditions in workers not caused solely by workplace hazards
  - Examples include stress-related conditions, cardiovascular, psychological, and musculoskeletal disorders, obesity, depression, substance abuse, and violence

- Separation of “work” and “non-work” is in some ways artificial
  - Due to labor or employment contract
The burden on workers and the nation is not just due to work, but the interaction of work and nonwork factors.
Too often, investigators have thought of nonwork factors as confounders or something to be adjusted for.
A useful way to think of work and nonwork factors related to workers comes through consideration of four heuristic conceptual models.

[Schulte et al. 2012; Pandalai et al. 2013]
Interaction of Occupational and Personal Risk Factors in Workforce Health and Safety

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Most diseases, injuries, and other health conditions experienced by working people are multifactorial, especially as the workforce ages. Evidence supporting the role of work and personal risk factors in the health of working people is frequently underused in developing interventions. Achieving a longer, healthy working life requires a comprehensive preventive approach. To help develop such an approach, we evaluated the influence of both occupational and personal risk factors on workforce health. We present 32 examples illustrating 4 combinatorial models of occupational hazards and personal risk factors (genetics, age, gender, chronic disease, obesity, smoking, alcohol use, prescription drug use). Models that address occupational and personal risk factors and their interactions can improve our understanding of health hazards and guide research and interventions. (Am J Public Health. 2012;102:434–448. doi:10.2105/AJPH.2011. 300249)

effectiveness of health protection and health promotion interventions. Specific problem-driven research focuses on a marginal effect that is averaged over the other risk factors in a given context. Such problem-driven research, although beneficial in understanding a specific risk factor, has led to a lack of comprehensive research on the combined role of PRFs and occupational risk factors (ORFs) in work-related illness and injury. ORFs and PRFs are not only potential confounders or effect modifiers of associations of each risk factor with disease, but they may also be on
Models for the Effects of Occupational Risk Factors (ORFs) and Personal Risk Factors (PRFs)

Model 1

ORF → D

PRF → D

Model 2

PRF → D

ORF → D

Model 3

ORF → D

PRF → D

Model 4

ORF → D₁

PRF → D₂

Adapted from Schulte et al. 2007, Schulte et al. 2009, and Ottman 1990
To address these work and nonwork factors that affect workers, a more holistic view is needed.

It may be useful to consider the concept of “well-being.”
Because while occupational health and safety are very important, the totality of worker health is more germane to them and the national welfare.

Also and quite importantly, workers and other people live to have hopes, dreams, relationships, and achievements.
These aspirations are described by the construct referred to as “well-being.”
Well-Being

- Aspiring to a good life
- Flourishing
- Characterized by happiness, life satisfaction, positive emotion, self-determination
- Includes health, but goes beyond it
- Related to individual, enterprise and national productivity
- Some definitions focus on the state of the individual worker
- Others focus on working conditions
Well-being (variously defined) is linked to:

- Lower healthcare costs
- Reduced injury rates
- Reduced illness rates
- Lower rates of absenteeism and presenteeism
- Worker and enterprise productivity
Difficulties in Operationalizing the Definition of Well-being

- Like “weather” and “freedom” in its structure
- No single measures define it exhaustively, that is “operationalizes” it
- Several elements contribute to it
- These elements are measurable

[Seligman 2012]
Promotion

Well-being of the population

Workplace well-being

Well-being of the workforce

Conceptual view of the possible relationship between work and non-work threats to, and promoters of, well-being. [Dashed lines show interaction of factors.]

Adapted from Schulte et al. [2014]
Can exposure-response models be developed?
Difficulties

Well-being

- Both subjective and objective attributes
- How to measure across various work settings and conditions
- How to adjust for subjective differences
- Not static
  - Evolves with time
  - Concept evolves
Well-being in Quantitative Risk Assessment (QRA)

Criteria questions:

- Whether hazards (threats) to well-being can be defined and measured;
- Whether outcome/response of exposure to these hazards can be defined and measured;
- Whether it is possible to develop exposure-response models and whether these need to be quantitative or qualitative;
Well-being in Quantitative Risk Assessment (QRA) (cont’d)

- Whether risk can be characterized and will it be possible to account for aspects such as uncertainty in sensitive populations, etc.;
- Whether the risk characteristics of threats to well-being can be used to drive risk management strategies.
Responsibility for Well-being

- Well-being
  - Inherent in the responsibility of the employer
  - However, since it includes threats and promoters that are also nonwork factors – the employee has responsibility too.
    - Slippery slope
      - blaming the worker for decreased well-being
    - Overlapping responsibilities
Barriers and Information Needs

- Issues in achieving well-being may be
  - Intractable
  - Difficult to achieve
Includes issues linked to

- Distribution of opportunity
- Income
- Lack of control
- Organization of work

Conflict between guidance for well-being and

Employers’ right to manage the workplace
Evidence-base for what works and doesn’t work in maintaining or achieving well-being

- Variable quality
- Job control correlated with higher well-being
- Job stressors with lower well-being
Policy Issues

- Is it a good idea to incorporate well-being as a focus for occupational risk assessments or guidance?
- Choice of definitions
- Role of numerous other disciplines
- Role of occupational safety and health as initiator of conversation
- Invest in operationalizing well-being first
Acknowledgements

Rebecca Guerin
Anasua Bhattacharya
Sudha Pandalai
Carol Merry Stephenson
Anita Schill
Thomas Cunningham
Donald Eggerth
Thank you!

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