Measuring Well-Being

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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.
We know the world of work is undergoing major changes.
In the nature of work
In the composition of workforce
In the types of workplaces
Most every country has hi-tech and classic hazards juxtaposed in startling contrasts.
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 contrast.
  - Compartmentalization leads to under-reporting.
The burden on workers and the nation is not just due to work, but the interaction of work and nonwork factors.
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 separate causal pathways.

(Schulte et al 2012)
Productivity: Presenteeism

Source: Hemp [2004]

MEDICAL and PHARMACEUTICAL
24% ($116.2M)

PRESENTEEISM
63% ($311.8M)

DIRECT MEDICAL COSTS
INDIRECT MEDICAL COSTS

Long-term disability
1% ($6M)

Absenteeism
6% ($27M)

Short-term disability
6% ($27M)

Source: Bank One

Figures are based on annual data for 2000. Workers’ compensation accounted for less than 1% of indirect medical costs.
Model 1: Additive Interaction

Occupational Risk Factor

Personal Risk Factor

Disease, Death, or Injury Effect
Example: Additive Interaction

Work-Related Psychosocial Factors

Musculoskeletal Disorders

Age
Model 2: Effect Modification by Personal Risk Factor

Personal Risk Factor

Occupational Risk Factor

Disease, Death, or Injury Effect
Example: Effect Modification by Personal Risk Factor

NAT2 Genotype

Aromatic Amines ➔ Bladder Cancer
Model 3: Effect Modification by Occupational Risk Factor

- Occupational Risk Factor
- Personal Risk Factor

Disease, Death, or Injury Effect
Example: Effect Modification by Occupational Risk Factor

Use of ladders

Opioids and benzodiazepine use → Falls
Model 4: Separate Pathway Interactions

Occupational Risk Factor → Disease, Death, or Injury Effect₁

Personal Risk Factor → Disease, Death, or Injury Effect₂
Example: Separate Pathway Interactions

- Noise
- Smoking
- Hypertension
- Coronary Heart Disease
Cost Burden of Chronic Disease

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

Total Direct: $217.6 billion
Total Indirect: $905.1 billion

Total: $1.1 trillion

DeVol & Bedroussian 2007
Forgone Economic Output Due to Chronic Disease

DeVol & Bedroussian 2007
To address these work and nonwork factors that affect workers, a more holistic view is needed.

We need 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
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
“…and well-being”
Need: Define and Operationalize “Well-being”

- Reviewed literature 1980-2014
- Found more than 39 definitions of well-being
Difficulties

Well-being

- Both subjective and objective attributed
- How to measure across various work settings and conditions
- How to adjust for subjective differences
- Not static
  - Evolves with time
  - Concept evolves
Well-being

- Driver of policy
- Target of policy?
- Means to achieve policy?
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
Caution

- Need to avoid thinking of well-being solely at the individual level
  - There is a broader social, economic, and political context
  - Well-being of workers influenced by all the domains in which they participate
- Value in thinking of well-being of the workforce
Thank you!

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Measuring Well-Being for the NIOSH Total Worker Health® Program

Ramy Chari (RAND Corporation)
Paul Schulte (National Institute for Occupational Safety and Health)

Action Collaborative on Business Engagement in Building Healthy Communities
Spring Webinar, May 16, 2018
Project background

How should well-being be defined in the context of Total Worker Health®?

TWH® is defined as policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being.
Project approach (Phase 1)

• Comprehensive literature review
  – Peer-reviewed and “grey” literature (e.g., government reports, books, magazine articles)
  – Social sciences, biomedical sciences, economics

• Identified over 1,000 articles and books

• To scope, we applied inclusion criteria
  – E.g., review articles and books, sample of empirical studies

• Reviewed 141 sources that informed model development
Conceptual issues for model development

1. What do we mean by *worker* well-being?

2. What well-being philosophies should inform the model?

3. How do we differentiate between what well-being is, and what drives well-being?
What do we mean by worker well-being?

- Work-related Well-being
- Workplace Well-being
- Worker Well-being
- Well-being at Work
- Occupational Well-being
- Employee Well-being

Well-being and Work

Preliminary Draft: Do Not Cite or Quote without Permission
Worker well-being is a holistic concept

• Workplace interventions are important to the achievement of worker well-being but so are broader programs that can touch on different areas of an individual’s life.

• A worker well-being model should therefore reflect internal (work) and external (outside work) factors that affect the experience of work.
Subjective assessment of the quality of one’s own life.

Objective well-being

Conditions that provide people opportunities to exercise a choice of action.

Critiques

- Hedonic adaptation
- Social comparison theory
- Cultural biases
- Paternalism
- Neglect of the lived experience
- Lack of guidance for prioritization

A combined approach
A combined approach has strengths

• There is theoretical justification for this approach. Well-being is defined differently across disciplines.
  – From a *psychological viewpoint*, well-being is a subjective evaluation of one’s life and/or feelings of happiness and other positive emotions (Subjective)
  – From a *human development viewpoint*, well-being is seen as the conditions that allow people to thrive or to be free to make their own decisions (e.g., educational opportunities, job security, etc.) (Objective)
  – From a *health viewpoint*, well-being is thought of as physical and mental health functioning (Objective)

• Our model is inclusive of multiple perspectives and adopts the approach taken by large, national and community-level surveys of well-being.
Community well-being models use a combined approach

<table>
<thead>
<tr>
<th>Well-being Model</th>
<th>Included Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Index of Well-Being; Gross National Happiness USA Index</td>
<td>Psychological well-being; community vitality; cultural diversity &amp; resilience; education; ecological diversity &amp; resilience; health; good governance; living standards; time use</td>
</tr>
<tr>
<td>UK Office of National Statistics Well-Being Index</td>
<td>Personal well-being; living arrangements/location; culture &amp; society; education &amp; skills; natural environment; health; governance; economy; relationships; personal finance</td>
</tr>
<tr>
<td>Santa Monica Well-Being Project</td>
<td>Outlook; community; place; learning; health; opportunity</td>
</tr>
<tr>
<td>Gallup-Healthways Well-Being Index</td>
<td>Purpose; community; social; financial; physical</td>
</tr>
</tbody>
</table>
Well-being outcomes versus drivers?

- Our review revealed definitional “messiness” across well-being literature
  - No standard approach to defining important domains

- Difficult to differentiate between drivers (influencers) of well-being and concepts that are part of the definition of well-being
  - E.g., some authors conceptualize social relationships as a driver of well-being; others saw it as a component of well-being.
Worker well-being encompasses many concepts

Well-being is like the weather – conceptualized in multiple ways

- Therefore to develop the framework, we used the literature to determine the major constructs that researchers have studied as domains or drivers of worker well-being and grouped them into categories.

- Our model presents a snapshot of worker well-being across several different indicators. We realize that the indicators may be causally related, but we are treating them as separate indicators of the same overall phenomenon.
Worker well-being is an integrative concept that characterizes quality of life with respect to an individual's health and work-related environmental, organizational, and psychosocial factors. It is the experience of positive perceptions and the presence of constructive conditions at work and in other areas of life that enables workers to thrive and achieve their full potential.
Project approach (Phase 2)

• Expert panel review
• Identification of existing instruments and assessment items
• Prioritization of subdomains and subdomain constructs
**Workplace physical environment & safety climate**

Aspects of individuals’ lives relating to the physical features of the work environment that comprise their working conditions.

<table>
<thead>
<tr>
<th>Subdomain</th>
<th>Subdomain Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace safety conditions</td>
<td>Perceptions of and satisfaction with safety climate</td>
</tr>
<tr>
<td>Workplace design</td>
<td>Environmental conditions; physical surroundings; pleasantness; disability and other accommodations</td>
</tr>
<tr>
<td>Workplace conflict and civility</td>
<td>Experience with harassment; incivility; discrimination</td>
</tr>
</tbody>
</table>
## Work evaluation and experience

Individuals’ experiences and evaluations of their working lives that comprise psychological well-being in the workplace context.

<table>
<thead>
<tr>
<th>Subdomain</th>
<th>Subdomain Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>Overall job satisfaction; supervisor/management; peers and coworkers; job security</td>
</tr>
<tr>
<td>Meaning and organization of work</td>
<td>Meaningful and purposeful work; autonomy; control; vigor; dedication; absorption; demands engagement</td>
</tr>
<tr>
<td>Affect</td>
<td>Positive emotions at work; negative emotions at work</td>
</tr>
</tbody>
</table>
Workplace policies and culture

Aspects of individuals’ lives relating to the organizational policy context in which they work.

<table>
<thead>
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<th>Subdomain</th>
<th>Subdomain Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary/rewards</td>
<td>Satisfaction with wages; advancement potential; recognition</td>
</tr>
<tr>
<td>Benefits</td>
<td>Types of benefits provided; satisfaction with benefits</td>
</tr>
<tr>
<td>Workplace culture</td>
<td>Respect; fairness; perceived organizational support</td>
</tr>
<tr>
<td>Workplace health culture</td>
<td>Organizational commitment to health; resources/programs</td>
</tr>
<tr>
<td>Work-life integration</td>
<td>Flexibility; perception of balance; organizational support for work/life balance; work/family conflict</td>
</tr>
</tbody>
</table>
Health status

Aspects of individuals’ lives relating to their physical and mental health and welfare.

<table>
<thead>
<tr>
<th>Subdomain</th>
<th>Subdomain Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical health</td>
<td>General/overall; presence of specific conditions</td>
</tr>
<tr>
<td>Mental health</td>
<td>General/overall; stress; depression; anxiety</td>
</tr>
<tr>
<td>Health-related behaviors and lifestyle</td>
<td>Physical activity; alcohol use; smoking; diet; sleep</td>
</tr>
<tr>
<td>Functionality</td>
<td>Physical; mental; cognitive</td>
</tr>
<tr>
<td>Injuries</td>
<td>Experience of injuries; severity</td>
</tr>
</tbody>
</table>
Home, community, and society

Aspects of individuals’ lives that are situated outside of work yet contribute to overall well-being and thus may influence worker well-being.

<table>
<thead>
<tr>
<th>Subdomain</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Life satisfaction</td>
<td>Overall life satisfaction</td>
</tr>
<tr>
<td>Financial health</td>
<td>Financial security</td>
</tr>
<tr>
<td>Social relationships</td>
<td>Social support</td>
</tr>
<tr>
<td>Community engagement and lifestyle</td>
<td>Types of activities engaged in; satisfaction with engagement</td>
</tr>
</tbody>
</table>
Uses of the worker well-being instrument

- Recommended use: worker population survey
  - Domain-specific scores
  - Dashboard approach to convey both objective and subjective data
  - Flexibility for characterizing worker well-being, examining macro-level research questions, or allowing for generalized approach to employer assessment of organization
Next steps

1. Fielding and pilot testing the survey
2. Psychometric testing and preparing a refined survey
3. Documentation development and dissemination of the survey instrument
Thank you!

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