Complexities and Caveats

Norbert K. Semmer, PhD
Prof. em., University of Bern, Switzerland
Visiting Scholar, Claremont Graduate University

Claremont Graduate University
August 19, 2016
We typically are not confronted with single stressors or resources. Constellations of various conditions have to be considered. Our knowledge about them is still rather limited.
Effort-Reward Imbalance: and cardiovascular disease

Risk of dying of CVD over 25 years

Imbalance between effort and reward

Lower third = reference group
Controlled:
Age, gender, occupation, smoking physical activity, systolic blood pressure, Total cholesterol, BMI


Nmax = 812 (73 Cases); Mean duration: 25.6 years
p < .05

N: I = 102; II = 107; III = 146; IV = 180 Participants

High rewards can – at least partially – compensate effects of overtime
Stress and social support by superiors

Problem group: High stress, low support ⇒ More symptoms

Social support helps to deal with stress

Percentage of employees with high psychosomatic symptoms (upper third)

Low level of stress    High level of stress

Low level of support

High level of support

Low Level of support

Depression among Women

The Person
Stress and personal Characteristics: Mechanisms

1. Exposition
   - People with certain characteristics are more likely to encounter stressful situations

2. Appraisal
   - People with certain characteristics are more / less likely to interpret a situation as stressful

3. Reactivity
   - People with certain characteristics react more strongly to situations appraised as stressful

4. Coping
   - People with certain characteristics cope differently with similar situations

Personality: Examples

- **Neuroticism / negative affectivity:**
  - Higher risk of ending up in stressful jobs (Spector et al., 1995)
  - Focus on threats (Gunthert et al., 1999)
  - More maladaptive coping-Strategies (Gunthert et al., 1999)
  - Anxiety: Stronger reaction to stressors (Suls & Martin, 2005)

- **Depression / low self-esteem**
  - Less attractive for others (Sacco et al., 1993)
  - Interpretation of failure as a sign of own incompetence (Brockner, 1988)

- **Hostility / low agreeableness**
  - Interpret ambiguous behavior of others as a sign of hostility (Berkowitz, 1998)
  - Stronger reaction to social stressors (Smith et al., 2004)
  - More conflicts (Smith et al., 2004)

- **Optimism**: More problem-focused coping behavior (Carver & Scheier, 1999)
Resilient People

- perceive their environment generally in a positive way
- are not hostile
- regard mistakes and failures as normal, not as a sign of incompetence
- hold the belief
  - that important things can be influenced (locus of control)
  - that they have the ability to exercise that influence (self-efficacy)
- are emotionally stable
- tend to cope in an active, problem-focused way

**Interaction between Person and Situation:**
Control at work as stress buffer as dependent on control beliefs

**Affective strain at work**

---

Interaction between Person and Situation:
Control at work as stress buffer as dependent on control beliefs

Affective strain at work

Internal locus of control:
Control buffers effect of stressors (in line with JCD-model)

External locus of control:
Control augments effect of stressors: Control becomes as stressor

Is it only work?
Private conditions, working conditions, and feeling recovered after a vacation

% well recovered

Private:
- Education level: 94%
- Partnership
- Financial difficulties

Work:
- Time pressure: 84%
- Control
- Resources to do work well: 78%

Private situation: 94%
- Good
- Not so good: 84%

Work situation: 78%
- Good
- Not so good: 53%

Cumulative Effects and Changes over Time

Many effects on health take time, accumulating over many years
Unfavorable work characteristics and metabolic syndrome

Unfavorable work characteristics: ISO-Strain:
- High demands +
- low control +
- low social support

Metabolic syndrome: at least three of the following risk factors:
- Waist > 102 cm for men, 88 cm for women
- Triglycerides ≥ 1.69 mmol/l
- HDL Cholesterol < 1.03 mmol/l for men/ 1.29 mmol/l for women
- Blood pressure ≥ 130/ ≥ 85 mm Hg
- Fasting glucose ≥ 6.11 mmol/l


Controlled for age, health behaviors, employment grade; only non-obese participants at time 1 without heart disease at time 1
Time 1 = 1989; Time 5 = 1997-1999; N= 6317; MBS assessed at time 5
Appreciation and Job Satisfaction among young people entering the work force: Cumulative Effects

Four measurements between 1997 and 2002 (N = 423)

Stress As Disrespect (SAD)

Controlling for Job satisfaction t1, Region, sex, occupation

Some effects are not easily reversed: Shift work as an example

Symptoms of ill health

<table>
<thead>
<tr>
<th>Shift workers</th>
<th>Non shift workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used to work shifts</td>
<td>Never worked shifts</td>
</tr>
</tbody>
</table>

Methodological Issues: Research Designs and Measurement
Research Designs

> Many studies in OHP are cross-sectional
> Working Conditions and Health are measured at the same time.
> Leaves open what causes what
  — Work may influence health
  — Health may influence work
> Many indications that both is true: Reciprocal effects
Longitudinal studies:
Testing lagged relationships from job stressors on strains and from strains on job stressors

Measurement

- Often, conditions at work and health/well-being are measured by self-report (e.g., questionnaire)
- Personal characteristics may determine answers to both kinds of questions
  - e.g., more depressed people may judge both the quality of their work and their own well-being to be low
- Measurements involving other types of measurement
  - e.g., assessing work by supervisors
  - Assessing health by biological indicators
- Often show weaker but still significant associations
  - Note: They are not necessarily really “objective“ measures

Measurement

- Self-report measures often predict outcomes determined by other measures
  - Perceived health is a good predictor of mortality (DeSalvo et al., 2005)
  - Self-report of working conditions predicts CVD (e.g., Siegrist, 2002)
  - Self-report of illegitimate tasks predicts sleep quality assessed by actigraphy (Pereira et al, 2014)
  - Self-report of stressful conditions at work predicts cortisol reactivity to experimental stress test (Wirtz et al, 2013)
  - Self-reported stress predicts performance of physicians in a simulated pulmonary resuscitation (Hunziker et al, 2011)

Conclusion:
- Self-report measures are error-prone but not „wrong“
- Alternative measures are important, but are also error-prone

Thank you!