Exploring the Impact of Suicide Prevention Research in the Workplace

Moderator: Sally Spencer-Thomas
Meeting Orientation

- Audio is streaming through your computer speakers. If you cannot listen through computer speakers, call 855-257-8350
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- This meeting will be recorded and archived.
Moderator

Dr. Sally Spencer-Thomas
Speakers

Dr. Steven Stack

Dr. Allison Milner
Suicide & Work Stress

Dr. Steven Stack, * Professor
Department of Psychiatry and Department of Criminology
Wayne State University, Detroit, MI USA
ICRC-S Webinar
Exploring Suicide Prevention Research: Evidence and Impact in the Workplace
March 24, 2015
Email: aa1051@wayne.edu
Research Gate Page: https://www.researchgate.net/profile/Steven_Sack
Organization of Presentation

• 1. Dimensions of work stress; meta analyses of effect of work stress on physical and mental health; prevalence of work related suicide using NVDRS; interventions.

• 2. Qualitative research: Case studies from Detroit Suicide Project on 3 subtypes – job demotion, toxic coworkers, bullying.

• 3. Quantitative research: 6 case/control studies.

• 4. Suicide by occupation and industry as clues to distribution of deadly work stress.

• 5. Suggestions for future research.
Dimensions of Work Stress

- **Job Strain** (involves tasks of a job)
  - Job Control (incl. skill level)
  - Job demands (e.g., workload, fast pace)
- **Low Social Support**: from coworkers, supervisors
  - Incl. individual bullying, discrimination, sexual harassment
- **Organizational (In)Justice**
  - Distributive Justice (or “Effort-Reward Imbalance (ERI)” are rewards fair?)
  - Procedural Justice (do rules apply equally to all)
  - Relational Justice (fair/cordial worker-supervisor relationships)
    - Incl. organizational bullying, reprisals against whistle blowers
- **Loss/failure** (e.g., unemployment, demotion, poor performance reviews)
- **Other**: e.g., work related injuries, court proceedings

References:
Significance: Numbers of Suicides, Mentally Troubled Workers, & Interventions

• A significant number of suicides are located at work.
• Between 1995-2001, 1,730 suicides took place at work. Accounted for 31% of all deaths at work.
• Between 2003-2010 1,804 suicides took place at the workplace, or 38% of all deaths at work.
• 6.4% of workers suffer from major depression & 1.1% bipolar disorder (National Comorbidity Survey)
• Average age of an American suicide is 44, mid life working age.
• While there have been many interventions to reduce workplace stress, there is little or no data on their effectiveness (Germain, 2014: 151).
SIGNIFICANCE: Work Stress (Effort/Reward Imbalance) and Heart Disease, Mental Illness

- **Heart Disease**. Meta analysis of 14 prospective studies determined that, on average, the adjusted risk ratio for a combination of *high effort/low rewards* at work was 1.58 (Kivimaki et al., 2006). (ERI strongest predictor)

- **Mental Disorders** (e.g., depression). Meta analysis of 11 studies *high effort/low reward* work stress increased relative risk for mental disorders by 1.84 (Stansfeld et al., 2006). (ERI strongest predictor)

- Sample ERI item: “Considering all my efforts & achievements, I receive the respect & prestige I deserve at work”

Prevalence of Work Stress Related Suicides: NVDRS 11%

- An analysis of 30,000 suicides in the National Violent Death Reporting System (NVDRS) determined that at least 11% are related to “job problems” (Stack & Bowman, 2012)

- Job problems refer to issues at work which contributed to the suicide. These include:
  - tensions with a coworker,
  - poor performance reviews,
  - increased pressure,
  - fear of layoffs, & unemployment.

- 11% is likely an underestimate since the NVDRS is simply based on the data received from the county level. CDC coders can input only what they receive from local county medical examiners & coroners. In some cases work related strains can play a part in suicide, but if they are not mentioned/coded during local investigations, they go unrecorded. There is no standard protocol used nation wide for coding economic factors in cause of death certification at the local level.

- In Australia, a study determined that 17% (642/3775) suicides were work related (Routley, 2012)


Qualitative Work--Detroit Suicide Project

- Job Demotion
- Conflict with Coworkers
- Worker (bully perpetrator) – supervisor conflict
Detroit Suicide Project, ongoing analysis of 1,400 case files

Combination of Strains: Loss, Effort/Reward Imbalance, & Procedural Justice.

- Ms. Smith, age 50, was called into her boss’s office. To her surprise, she was notified that she was being demoted at her position with the company.

- Ms. Smith finished her work that day and left for home at 5 PM.

- She drove home and opened her garage with her remote control. She closed the door behind her and kept the engine running. She died of CO poisoning.

Conflict between Co-workers & Suicide-- Case of the Steakhouse Slashers: Detroit Suicide Project

- Two workers in a steakhouse had a history of conflict. One night they attacked each other with knives. One required 120 stitches from wounds inflicted by his adversary. Subsequently, the employer fired both of them. Shortly thereafter the victor in the fight took his own life.

• A 35 year old white, single male had frequent altercations with his female supervisor at a large automotive factory. His coworkers had teased him and taunted him about it. Conflicts escalated until the man was “written up” by his female supervisor placed on temporary layoff. Shortly thereafter he suicided by firearm.

Quantitative Work

- Searched Medline, Soc Abstracts, for studies on
  - death by suicide (suicide ideation, attempts omitted)
  - with a control group with which to compare the suicides (descriptive studies on suicides only omitted)
  - with at least one measure of work stress
- 6 studies met the criteria
- Findings mixed. Strongest findings are for one study of job demotion & suicide. No studies on ERI.
## Review of Case Control Studies on the Effect of Work Stress on Suicide Deaths

<table>
<thead>
<tr>
<th>Author (year)</th>
<th>Nation</th>
<th>Number suicides/controls</th>
<th>Adjusted Work Stress Measures (* = p &lt; .05)</th>
<th>Adjusted for Mental Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stack (2015)</td>
<td>USA</td>
<td>1169/12728</td>
<td>Job Demotion*</td>
<td>Yes</td>
</tr>
<tr>
<td>Law (2014)</td>
<td>Hong Kong</td>
<td>63/112</td>
<td>Job strain (JS) overall</td>
<td>JS mediated by mental disorders</td>
</tr>
</tbody>
</table>
| Schneider(2011)| Germany | 163/390          | Job Control (JC)*  
Job demands*  
Social support (SS)* | YES |
| Tsutsumi (2007)| Japan  | 14/3111          | Job control,* demands                   | NO                            |
| Ostry (2007)  | Canada, saw mill workers | 162/486      | JC; Psych demand*;  
Phys demand; SS; noise. | NO                            |
| Feskanich (2002)| USA, nurses | 73/94033      | work stress overall                     | NO                            |

Job Demotion as a Work Stress Factor: Nat’l Mortality Followback Survey

- The second American NMFBS did measure two work stress constructs: unemployment and job demotion in the last year of life.
- Controlling for psychiatric morbidity (e.g., major depression), demographics, and protective factors (e.g., religiosity), job demotion was a leading predictor of death by suicide vs. natural causes.
- Those demoted at work in the last year of life were 7.29 times more apt to die of suicide than those who were not demoted.
- (Note a study of Hong Kong workers reported that 31% of suicides were in danger of demotion/job loss vs. only 8.3% controls (Law et al., 2014).

Clues to Locating Areas of High Suicide & High Work Stress

• Suicide by Occupational Groups

• Suicide By Industry
Distribution of Work Stress: Occupations

- Suicide Rates Vary by Occupation. This variation may provide a window into which jobs are more or less stressful than average.
- Can suggest where suicide prevention resources are most needed.
Data from the National Mortality Detail file found 15/32 occupations (32 with an adequate number of suicides to calculate reliable rates) had elevated or less than average suicide risk ratios.

However, controlling out demographic covariates (age, gender, race, marital status), only 8/32 had significantly elevated or lower suicide risk.

Elevated risk: doctors, nurses, dentists, artists, social workers, mathematicians/scientists.

Lower Risk: Adjusted odds ratios indicated that clerks and farm workers had significantly lower suicide risk.

(Stack, S. 2001. Occupation & suicide. Social Science Quarterly, 82 (June), 384-396.)
Suicide Risk by Industry

• Suicide rates vary by industry.
• This variation can also provide a window into locating which industries have the highest suicide risk.
• An analysis of the Nat’l Longitudinal Mortality Study (1979-1989) determined that of 12 industries the ones most at risk of high suicide included:
  – Mining 4.39 RR    Construction 2.59 RR
  – Reference category: Financial services/insurance
Suicide Risk by Industry

DISCUSSION: Problem: Lack of Data on Job Stress & Suicide in the USA

• Large American datasets and databases with data on suicides and a control group (e.g., natural deaths, living controls) tend to have few, if any, measures of work stress
  – Nat’l Mortality Followback Surveys,
  – Multiple Cause of Death Files,
  – Mental Health Research Network database.
  – Suggest: Need a new Mortality Followback Survey or Expansion of another large survey (e.g., National Health Interview Survey) to include items on work stress (especially ERI).
Other Suggestions for Future Research

1. Following leads in work stress and mental illness/physical illness, more attention needs to be drawn to ERI, effort-rewards imbalance (fair rewards) as a predictor of suicide.

2. Evidence on job control/demands as well as social support is rather mixed. Organizational stress & loss (e.g., demotion) may prove to be better predictors of suicide than job control/demands & social support on the job.

3. Controls for mental illness. Half of the existing work does not control for a possible covariate of suicide/work strain: mental illness. Future work needs to build a strong research model with adjustments for this factor.

1. Analysis of the narratives in the National Violent Death Reporting System is needed to clarify the degree to which each category of job problems is connected to suicide deaths. For example, of 30,000 cases there are over 3,000 suicides that were linked to job problems. Unfortunately, CDC coders do not code the subtypes of job problems.

2. Possibly CDC could instruct their coders to start to break down “job problems” into subcategories so we would have national estimates of just what kinds of work stress are most likely to foster suicide deaths.

3. It would help tremendously to include a control group of natural deaths with which the suicides (& homicides) could be compared.
THE
END
Workplace suicide prevention: Planning for tomorrow

Dr Allison Milner
Research Fellow,
Work, Health and Wellbeing, University of Melbourne

Exploring Suicide Prevention Research: Evidence and Impact in Multiple Settings
ICRC-S Webinar March 24, 2015
McCaughey VicHealth Centre for Community Wellbeing
Overview

- Primary prevention
- Work related risk factors
- Occupations at risk
- What we know about workplace suicide prevention
- Principles for the future
**Primary Prevention**
(prevention, proactive)
Aims to reduce potential risk factors and increase protective factors.

**Secondary Prevention**
(Ameliorative, remedial)
To equip people with the knowledge, skills and resources.

**Tertiary Prevention**
(Reactive)
To treat, compensate and rehabilitate

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**2007 LIFE FRAMEWORK**

- Universal Intervention
- Selective Intervention
- Indicated Intervention
- Symptom identification
- Early treatment
- Standard treatment
- Longer term treatment and support
- Ongoing care and support

**PUBLIC HEALTH MODEL**

- McCaughey VicHealth Centre for Community Wellbeing
Primary prevention: The WHO guidelines (2006)

“Worker suicide is a complex interaction between individual vulnerabilities (such as mental health problems), stressful working conditions, and living conditions (including social and environmental stressors)…”

“The over-riding goal should be to create a working environment that is respectful to the individual, maintains worker integrity, and minimizes and counteracts stress”
Suicide in the employed population

- The majority of suicide cases occur among the employed population.

- The workplace is relatively untapped as a location for suicide prevention!!
Suicide among the employed (and non employed) population during the Global Financial Crisis
Age-adjusted suicide rates among the employed and economically inactive by sex, 2001 to 2010


<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th></th>
<th>Males</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>RR</td>
<td>95% CI</td>
<td>p-value</td>
<td>RR</td>
<td>95% CI</td>
<td>p-value</td>
</tr>
<tr>
<td><strong>Economically inactive</strong></td>
<td>2009</td>
<td>1.05</td>
<td>0.95, 1.16</td>
<td>0.345</td>
<td>0.98</td>
<td>0.93, 1.04</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td><strong>1.19</strong></td>
<td>1.08, 1.32</td>
<td><strong>0.001</strong></td>
<td>1.22</td>
<td>1.15, 1.29</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>1.12</td>
<td>1.01, 1.23</td>
<td>0.030</td>
<td>0.98</td>
<td>0.93, 1.04</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
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<tr>
<td><strong>Employed</strong></td>
<td>2009</td>
<td>0.87</td>
<td>0.79, 0.97</td>
<td>0.012</td>
<td>0.94</td>
<td>0.90, 0.99</td>
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<tr>
<td></td>
<td>2008</td>
<td>0.78</td>
<td>0.70, 0.87</td>
<td>&lt;0.001</td>
<td>1.04</td>
<td>0.99, 1.09</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td><strong>0.99</strong></td>
<td>1.10, 0.84</td>
<td>0.843</td>
<td>1.07</td>
<td>1.02, 1.12</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Possible mechanisms

Unemployment at the aggregate level

Job insecurity

Mental health problems/suicide?

Possible mechanisms

Work related risk factors

Psychosocial job stressors and suicide

- Monotonous work
- High job demands
- Low job control

- Parallels findings in mental health research....

Risks of suicide by occupational skill level
The ISCO Groupings

0. Military occupations
1. Managers, senior officials and legislators
2. Professionals
3. Technicians and associate professionals
4. Clerks
5. Service and sales workers
6. Skilled agricultural and fishery workers
7. Craft and related trades workers
8. Plant and machine operators, and assemblers
9. Elementary occupations

Results – 9 occupational groups

ISCO 1 – managers, ISCO 2 – professionals, ISCO 3 – technicians, ISCO 4 – clerks, ISCO 5 - services/sales, ISCO 6 - agricult/fishery, ISCO 7 - craft/ trades, ISCO 8 - machine operators, ISCO 9 - elementary

Suicide rates in the construction industry, with a focus on the GFC

Why are some occupational groups at risk?

- Unmeasured disadvantage
  - Lower education, access to services, social disadvantage
- The quality of work
- Exposure to other risks associated with work
- Access to lethal means
- Individual characteristics – selection effects

Modifiable risk factors

Underlying vulnerability → Bullying → Suicide

Modifiable risk factors

Underlying vulnerability → Bullying → Suicide

Workplace suicide prevention – 2014 review

Workplace suicide prevention - review

• Systematic review
  – MOOSE guidelines. Had to be provided to employees of an organisation

• Results = 13 studies

• Group 1 = stand-alone, short-term training programs

• Group 2 = suicide prevention initiatives for ‘high risk’ industries or occupations

Workplace suicide prevention - review

• Some evidence of a reduction in suicide attempts/deaths
• Some evidence of an increase in help-seeking behaviours
• No studies addressing adverse work-related exposures as risk factors for suicide

Economic evaluation of workplace suicide prevention

Economic evaluation of workplace suicide prevention

- Implementation of MIC estimated to reduce suicide in NSW
  - 0.4 suicides per year, 1.01 attempts, 4.92 short term absence
- Benefit of averting this harm is estimated at $3.66 million each year

Take home messages

• Primary prevention
• Tailor interventions
• Do no harm
• Plan evaluation from the outset
Thank you!
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http://mccaugheycentre.unimelb.edu.au/
Acknowledgments

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• The Victorian Health Promotion Foundation
References


Questions?

Next webinar:
Exploring the Impact of Suicide Prevention Research in Schools
Tuesday, April 21, 2:00 to 3:00 pm EST
http://edc.adobeconnect.com/e24zcpei69c/event/registration.html

Please complete this brief evaluation:
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