H & P Improvement

Generally refers to strategies undertaken to prevent, reduce or otherwise manage the adverse effects of a population’s health problems on its work performance and productivity.
H & P Improvement Strategies Are Challenging

• The impact of specific health problems is hard to isolate
• The amount of change in health required to produce a change in productivity is usually unknown
• The methods for achieving meaningful change and their costs are unknown
The Work Limitations Questionnaire (WLQ)

Developed By:

D Lerner
B Amick III
WH Rogers
S Malspeis
K Bungay
and D Cynn
Components of Health-Related Productivity Loss

- Presenteeism → WLQ
- Absenteeism → Time Loss Index
The Work Limitations Questionnaire (WLQ)
Time Management Scale

In the past 2 weeks, how much of the time did your physical health or emotional problems make it difficult for you to do the following?

(Mark one box on each line a. through e.)

<table>
<thead>
<tr>
<th></th>
<th>All of the Time (100%)</th>
<th>Most of the Time</th>
<th>Some of the Time (About 50%)</th>
<th>A Slight Bit of the Time</th>
<th>None of the Time (0%)</th>
<th>Does Not Apply to My Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>work the required number of hours</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>b.</td>
<td>get going easily at the beginning of the workday</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>c.</td>
<td>start on your job as soon as you arrived at work</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>d.</td>
<td>do your work without stopping to take breaks or rests</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>e.</td>
<td>stick to a routine or schedule</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
</tbody>
</table>

Note: For permission to use the WLQ, contact WLQ@tufts-nemc.org
The Work Limitations Questionnaire (WLQ)  
Output Scale

In the past 2 weeks, how much of the time did your physical health or emotional problems make it difficult for you to do the following?  
(Mark one box on each line a. through e.)

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</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
<td>[ ] 0</td>
</tr>
<tr>
<td>b.</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
<td>[ ] 0</td>
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<tr>
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<td>[ ] 3</td>
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<td>d.</td>
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<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
<td>[ ] 0</td>
</tr>
<tr>
<td>e.</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
<td>[ ] 5</td>
<td>[ ] 0</td>
</tr>
</tbody>
</table>

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WLQ Levels of Data
25-Item and 8-Item Versions

Summary Score
% Productivity Lost Compared to Benchmark

Job Level
% Time with Impaired Job Performance

Task Level
% Time with Impaired Task Performance

Time Management
Physical Tasks
Mental-Interpersonal Tasks
Output Tasks
H & P Improvement: Why Start with Depression?

- Common, chronic ailment
- Documented impact on employment
- Strong evidence base documenting effects of detection, diagnosis and treatment on symptoms
- Some evidence that effectively treating symptoms benefits employment
- Many people with depression do not get the care they need
Why More May Be Needed

- The goal of medical care is not aligned completely to the goal of H & P Improvement
- Medicine assesses and treat signs and symptoms of disease
- A clinically meaningful change in disease may not translate into adequate performance and productivity
- Other variables contributing to performance and productivity deficits typically are not addressed
## Diagnostic Category by Symptom Grouping

<table>
<thead>
<tr>
<th>Diagnostic Category</th>
<th>Number of Symptoms</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depression</td>
<td>&gt; 5 depressive symptoms, one of which is depressed mood or anhedonia</td>
<td>&gt; 2 weeks</td>
</tr>
<tr>
<td>Minor Depression</td>
<td>2-4 depressive symptoms, one of which is depressed mood or anhedonia</td>
<td>&gt; 2 weeks</td>
</tr>
<tr>
<td>Bipolar Disorder</td>
<td>Periods of meeting criteria for MDD plus either periods with &gt; 4 manic symptoms 2 if patient has elevated mood, or &gt; 5 manic symptoms if patient has irritable mood</td>
<td>&gt; 2 weeks for depressive symptoms&lt;br&gt; &gt; 7 days for manic symptoms, shorter duration required if hospitalized</td>
</tr>
<tr>
<td>Dysthymic Disorder</td>
<td>3-4 depressive or dysthymic symptoms</td>
<td>&gt; 2 years</td>
</tr>
</tbody>
</table>
The Health and Work Study

- NIMH-Sponsored, 2000-2004
- Screened 14,000 in MA physician offices
- Enrolled 572 (eligible = employed $\geq 15$ hours/week with no plans to stop working, no major comorbidities)
- Depression Group = 286 (Dysthymia = 72, MDD = 105, Double Depression = 109)
- Healthy Controls = 193
- Rheumatoid Arthritis Group = 93
- Surveyed at BL, Month 6, Month 12, and Month 18
Impact Measures

• Unemployment vs. Employment
• Job Retention vs. Turnover
• Absenteeism
• Presenteeism
# Health and Work Study: Job Loss Six-Months Later

<table>
<thead>
<tr>
<th></th>
<th>Dysthymia</th>
<th>MDD</th>
<th>Double</th>
<th>RA</th>
<th>Control</th>
<th>( p )-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 400</td>
<td>51</td>
<td>69</td>
<td>76</td>
<td>72</td>
<td>132</td>
<td></td>
</tr>
<tr>
<td>% Unemployed</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>3</td>
<td>1</td>
<td>(&lt; .0001)</td>
</tr>
<tr>
<td>% Fired/Laid Off</td>
<td>7</td>
<td>13</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>( .036)</td>
</tr>
<tr>
<td>% Quit A Job</td>
<td>17</td>
<td>22</td>
<td>14</td>
<td>1</td>
<td>6</td>
<td>( .002)</td>
</tr>
<tr>
<td>% Cut Back Hours</td>
<td>30</td>
<td>36</td>
<td>21</td>
<td>15</td>
<td>16</td>
<td>( .008)</td>
</tr>
<tr>
<td>% Full-to-Part Time</td>
<td>4</td>
<td>12</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>( .001)</td>
</tr>
<tr>
<td>Number of Days Missed</td>
<td>1.2</td>
<td>2.1</td>
<td>1.8</td>
<td>0.8</td>
<td>0.7</td>
<td>(&lt; .0001)</td>
</tr>
</tbody>
</table>

\( p \) values indicate significance of the difference between Depression versus other two groups; adjusted for age, gender and number of co-morbid medical conditions.

Depression’s Burden Persists

PHQ-9 Severity

Months from Baseline

The Work Productivity Gap

Effect of Having the Worst Score on Explanatory Variables vs. the Best Score

**WLQ Time Scale**

**Job Content**
- Requirement for Use of Judgement and Communication Skills: $p = .05$
- Required to Work with External Customers: NS

**Depression Symptoms**
- Difficulty Concentrating/Fidgety, Distracted: $p < .001$
- Sleep Problems/Fatigue: $p < .002$

**Physical Health**
- SF-12 Physical Component Scale: $p < .001$

$n = 329$
$r^2 = .35$

Model adjusts for age, gender and education.

Effect of Having the Worst Score on Job and Symptom Variables vs. the Best Score

WLQ Mental-Interpersonal Scale

Job Content
- Requirement for Use of Judgement and Communication Skills: NS
- Required to Work with External Customers: p=.03

Depression Symptoms
- Difficulty Concentrating/Fidgety, Distracted: p<.001
- Sleep Problems/Fatigue: p<.001

Physical Health
- SF-12 Physical Component Scale: p<.001

n=331
r²=.45
p<.0001

Model adjusts for age, gender and education.

Effect of Having the Worst Score on Job and Symptom Variables vs. the Best Score

WLQ Output Scale

**Job Content**
- Requirement for Use of Judgement and Communication Skills: p=.01
- Required to Work with External Customers: p=.34

**Depression Symptoms**
- Difficulty Concentrating/Fidgety, Distracted: p<.001
- Sleep Problems/Fatigue: p<.001

**Physical Health**
- SF-12 Physical Component Scale: p<.1

n=330
\(r^2=.40\)
p<.0001

Model adjusts for age, gender and education.

Study 1 Conclusions

• Multiple dimensions of job performance are impaired by depression, more so than other common illnesses.

• Impaired performance persists despite symptom improvement.

• Additional efforts are needed to reduce work impairment secondary to depression.
Unique Characteristics of a Workplace Intervention

• Opportunity to detect depression in a community setting

• Use of existing resource:
  – Employee Assistance Program (EAP) counselors

• Opportunity to encourage employer investment by demonstrating “return on investment” (ROI)
The Work and Health Initiative (WHI)  
Aeronautics Manufacturer and Maine State Government

- Web-Based Employee Health Screening with Feedback
- Depressed and Work-Impaired Employees Enrolled in 16-Week WHI Program
- Care Provided by EAP Counselors On the Phone
- Three Care Components
- Medical Care Coordination
- Self-Help using Cognitive Behavioral Therapy Strategies
- Work Coaching

(Lerner, Adler, Rogers and Hermann, 2004-7)
Means and Mean Change Scores From Baseline to 6-Month Follow-Up for WHI and NIMH Sample Aeronautics Manufacturer Study

<table>
<thead>
<tr>
<th>Category</th>
<th>WHI Study Pre-Post Change</th>
<th>Comparator Study Pre-Post Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Management</td>
<td>-17*</td>
<td>-5*</td>
</tr>
<tr>
<td>Physical Tasks</td>
<td>-12*</td>
<td>-4*</td>
</tr>
<tr>
<td>Mental-Interpersonal Tasks</td>
<td>-8*</td>
<td>-4*</td>
</tr>
<tr>
<td>Output Tasks p&lt;.05</td>
<td>-16*</td>
<td>-2*</td>
</tr>
<tr>
<td>Productivity Lost p=.01</td>
<td>-10*</td>
<td>-2*</td>
</tr>
<tr>
<td>Depression Severity p&lt;.001</td>
<td>-7*</td>
<td>-2*</td>
</tr>
</tbody>
</table>

* p ≤ .05

Work Limitations Questionnaire (WLQ)
Mean Change Scores From Baseline to Four-Month Follow-Up
Maine State Government Study: Treatment vs. Usual Care

-18*  -11*  -12*  -14*  -4*  -5*

Time Management p<.01
Physical Tasks p<.05
Mental-Interpersonal Tasks p<.05
Output Tasks p<.01
Productivity Lost p<.001
Depression Severity P<.0001

* p ≤ .05

Work Limitations Questionnaire (WLQ)

PHQ-9
Summary

• Depression’s large human and economic burdens were reduced with the WHI.

• The WHI improved employees’ depressive symptoms and work productivity.

• The technology exists to measure the impact of depression and other conditions on workplace functioning.

• The impact of depression on functioning remains among the highest of all medical conditions.