SELF-MANAGEMENT BURDEN AND DEPRESSION IN MULTI-MORBIDITY

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75 Year-Old Male Smoker with Type 2 Diabetes and COPD

- 5 medications
- Local muscle-strengthening exercise
- Limitations for alcohol consumption
- Weight loss
- Self-monitoring of blood sugar integrated with an educational program
- Smoking cessation medication
- Appropriate footwear for diabetes
Multi-morbidity (MM)

“The presence of 2+ chronic illnesses in an individual”

Over half of adults >65 have 3+ comorbidities.

Multi-morbidity is challenging:
- Polypharmacy
- Increased self-management

*BMJ* 2015;350:h176
Additive approaches to MM

- Most common approach to MM
  - Count of chronic conditions correlated with different outcomes

- But is it additive?
  - What is the impact of each disease on daily life?

- What contextual variables make MM even more challenging?
Burdensome multi-morbidity

**Self-management burden**
Every chronic illness adds to older adults’ self-management burden

**Depression ↑**
Likelihood of depression in older adults increases with each additional chronic illness

**Burdensome MM**
Is the burden of co-occurring illnesses high in self-management needs associated with depression?
AIM
To assess whether multiple illnesses with high self-management needs might explain increased depressive symptoms
STUDY DESIGN

- Secondary analyses
- RCT of 261 older adults with uncontrolled asthma
- Recruited from primary care clinics in New York City
- Cross-sectional data from baseline interview
Comorbidities

Have you ever been told by the doctor that you have any of the following conditions?

- Diabetes
- Hypertension
- Congestive heart failure
- (+ asthma)

Burdensome MM

Depressive symptoms

PROMIS SF8a assesses over past week.
STATISTICAL ANALYSES

Race
Income
Education

Burdensome MM

Depressive symptoms
SAMPLE CHARACTERISTICS

Mean Age: 69
Female: 86%
Black or Latino: 92%
High school or less: 62%
Below NY state poverty line: 63%
SAMPLE COMORBIDITIES

Hypertension 83%
Diabetes 43%
Congestive Heart Failure 13%

39% BURDENSOME MULTI-MORBIDITY
Mild to severe depression
Based on cut-off score

(T scores > 55 indicate mild-severe depression)
RESULTS

Patients who met criteria for mild to severe depression (vs no depression):
• Lower incomes
• Lower levels of education
• More likely Hispanic or Latino

Age and gender did not differ by depression status
RESULTS

Patients with Burdensome MM
- N = 103
- PROMIS depression mean = 54.0 (SD = 10.8)

Patients without Burdensome MM
- N = 154
- PROMIS depression mean = 49.5 (SD = 9.9)

*Clinically meaningful difference (PROMIS>3)

Race
Income
Education

β = 0.17

Depressive symptoms

(F (10, 224) = 3.58 p = .0002, R^2 = .143)
CONCLUSIONS

> self-management burden was associated with > depressive symptoms

Difference was clinically meaningful

Care implications
Multi-morbidity > the sum of the diseases.

A better understanding of how psychological and social factors lead to worse outcomes for patients with MM is needed.
THANKS!

Any questions?

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## RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Depressed</th>
<th>Non-depressed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race/Ethnicity (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>35.3</td>
<td>64.7</td>
</tr>
<tr>
<td>Black</td>
<td>16.9</td>
<td>83.1</td>
</tr>
<tr>
<td>White non-Hispanic</td>
<td>4.6</td>
<td>95.4</td>
</tr>
<tr>
<td>Asian/Other</td>
<td>0.0</td>
<td>100.0</td>
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<tr>
<td><strong>Education (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>34.0</td>
<td>66.0</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>21.8</td>
<td>78.2</td>
</tr>
<tr>
<td>Some College</td>
<td>25.5</td>
<td>74.5</td>
</tr>
<tr>
<td>College Graduate</td>
<td>12.2</td>
<td>87.8</td>
</tr>
<tr>
<td><strong>Income (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$740 or less/month</td>
<td>36.0</td>
<td>64.0</td>
</tr>
<tr>
<td>$741 - $1,350/month</td>
<td>28.7</td>
<td>71.3</td>
</tr>
<tr>
<td>$1,351 - $3,000/month</td>
<td>14.8</td>
<td>85.2</td>
</tr>
<tr>
<td>$3,000 or more/month</td>
<td>10.3</td>
<td>89.7</td>
</tr>
</tbody>
</table>

**p<.01**
Chi-square test

Age and gender did not differ by depression status
## RESULTS

<table>
<thead>
<tr>
<th>N</th>
<th>PROMIS T score (M, SD)</th>
<th>$B$ (standardized regression coefficient)</th>
<th>p (adjusted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with Burdensome MM</td>
<td>103  54.0 (10.8)</td>
<td>.17*</td>
<td>.0126</td>
</tr>
<tr>
<td>Patients without Burdensome MM</td>
<td>154  49.5 (9.9)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adjusted model: Depression T score = Burdensome MM + income + education + race